Grammar in 3D: on linguistic theory design
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5 EMPTY CATEGORIES AND BEYOND

5.1 INTRODUCTION

A linguistic framework’s belief in empty categories and other theory-internal devices is strongly linked to the main architectural tenets of the theory. Various factors defining the organization of a theory of language determine whether such categories need to be used: the autonomy or non-autonomy of the syntactic, phonetic, and semantic (and further) levels of representation; the presence or absence of a clear priority of one level of representation over others leading to a pre-determined direction of interfaces or the lack thereof; the allowance or non-allowance for mismatches in the quantity and type of representations at the different levels of representation; and the search for a fully transparent interface between the various levels or the allowance for a flexible interface.

This chapter discusses the relation between a linguistic model’s architectural tenets and its use or rejection of syntactic covert or empty categories, traces, movement and other theory-internal devices for a wide range of linguistic phenomena ranging from ellipsis to raising and control. Section 5.2 discusses sluicing; section considers 5.3 small clauses; section 5.4 illustrates pseudo-coordination and pseudo-subordination; section 5.5 discusses interjections; section 5.6 examines the representation of dropped subjects in imperative sentences as an illustration of understood arguments; section 5.7 analyzes raising and control. These phenomena have been chosen because they represent a potential problem for transparent mappings between levels of representation such that a theory of language can represent them by means of a mismatch in their formalization of by introducing a theory-internal device to avoid
such representational mismatches. All phenomena are discussed firstly in general terms and secondly according to Generative Grammar, the Parallel Architecture and Functional Discourse Grammar. Section 5.8 offers a summary of the chapter.

A main research question will be how a theory of language approaches a linguistic mismatch – i.e. by reproducing the mismatch in the formal representation of language or, alternatively, by introducing one of the above-mentioned covert categories or devices in order to avoid the formal mismatch. The following factors are seen to restrict the possible choice as to how to represent these phenomena: the allowance or rejection of representational mismatches; the (non) transparent character of interfaces; the autonomy vs. the derived character of levels of representation; and the directionality of interfaces – i.e. a model’s approach to the three Ds. This section examines how mainstream Generative Grammar, the Parallel Architecture and Functional Discourse Grammar account for these and other phenomena. I will relate this to the architectural tenets of the models and, ultimately, to the varying level of abstractness displayed by the theories.

5.2 SLUICING

5.2.1 INTRODUCTION

Sluicing is a particular type of ellipsis. In an ellipsis, “there is meaning without form” (Merchant fc.: 2) in that the ellipsis site contributes to the interpretation of an utterance without being phonetically realized, thus creating a gap in a given sentence that can be recovered if present in the discoursal or situational context (Brucart & MacDonald 2012). There are various types of ellipsis depending on the kind of structure that is omitted. (38) below (Merchant fc.: 3) illustrates a particular instance of ellipsis called sluicing, “in which the sentential portion of a constituent question is elided, leaving only the wh-phrase”
(Merchant 2003: 3, see also Merchant 2001). (39) below is a semantic “translation” or non-elliptical counterpart of (38). The ellipsis in (39) appears in brackets

(38) John can play something, but I don’t know what.

(39) John can play something, but I don’t know what [John can play].

In such non-default mappings between meaning and form, an empty syntactic category may be introduced to represent the syntax of the ellipsis site. Since ellipsis is meaning in the absence of (at least apparent) form, a model can choose to represent meaning and not form or, alternatively, it can choose to represent the ellipsis both at a meaning and at a form level – resorting to some covert or empty element in syntax that provides the semantic representation of the ellipsis site with a syntactic counterpart. If a theory of language represents the ellipsis site at a meaning but not at a form level, a mismatch (in the sense described by Francis & Michaelis 2000) is created in that what is present at a semantic level (the meaning of the ellipsis) is absent at formal levels of representation—or at the interfaces between them. If, on the contrary, a theory of language assumes that ellipsis is meaning in the lack of overt though not of covert syntactic form, the mismatch syntax-semantics is avoided in that the semantic representation of the meaning of the ellipsis is provided with a syntactic counterpart.

The main architectural tenets of a theory of language thus determine whether the analysis of phenomena such as sluicing are represented by means of a mismatch or by trying to avoid such a mismatch (in which case it is interesting to see

29 Note that some languages allow for more than one remnant in the sluice. In German, for example, one could say “John kann irgendwas irgendwann spielen, obwohl ich weiß nicht was wann” (“John can play something some time, but I don’t know what when”) (see e.g. Heck & Müller 2003).
which device the theory uses in order to avoid the representational mismatch). Representing the ellipsis site both at syntax and at semantics is a logical move if semantics is interpreted from syntax, since that means that the meaning of ellipsis appearing in semantics has to come from somewhere in the syntax. If ellipsis appears at a syntactic level, there also has to be some mechanism in the course of derivation that accounts for their lack of apparent form - PF deletion (Sag 1976) (cf. null categories at syntax in Wasow 1972). In those linguistic frameworks in which ellipsis is considered to be both semantic and formal (e.g. Government & Binding in Chomsky 1981), there should be no need to create a mismatch, since semantic elements have formal counterparts – e.g. phonetically null categories. On the contrary, in those linguistic frameworks in which ellipsis is considered to be only semantic, a meaning-form mismatch is created and the mismatch needs to be allowed by the architectural tenets of the theory.

5.2.2 TGG AND SLUICING

Generative Grammar offers various explanations of sluicing (and of ellipsis in general), although most of them share an abstract or underlying syntactic structure that contains the ellipsis site. Approaches of TGG that account for ellipsis as unpronounced syntactic structure are called “structural” (vs. “non-structural”, see Merchant f.c.: 6). There are two main explanations of ellipsis within the mainstream generative framework. Firstly, there is the deletion approach, according to which the to-be-éléd constituent is created at an underlying syntactic level of representation and is subsequently deleted at a later stage of the derivation due to identity with its antecedent in the first conjunct, thus creating an ellipsis. The deletion of the syntactic site of the ellipsis takes place at the syntax-phonetics interface or Phonetic Form (PF). Deletion is carried out in order to prevent the ellipsis site from appearing at the phonetic level

Figure 71 below illustrates a syntactic representation of the bold type in (40) from Merchant (fc.: 3, emphasis added) following this deletion approach. The ellipsis site in brackets in (41) (the non-elided counterpart of (40)) is contained in the rectangle in Figure 71. According to Merchant (2001), sluicing takes place such that the wh-phrase is moved outside of the IP and the IP is subsequently deleted. Note that Merchant (ibid) does not consider this deletion to be syntactic but purely phonological: “there is no transformation or operation of deletion on this view, no ‘Delete a’ or other syntactic process of deletion or structure-destruction etc. The nonpronunciation is entirely controlled by the actual phonology (that component which takes a PF structure as its input)… Deletion as a notion is completely eliminated from the syntax” (Merchant 2003: 7). However, ellipsis does involve “full, regular syntactic structures which go unpronounced” (ibid: 4). The second conjunct has therefore an underlying structure that contains the full structure of the ellipsis, which is subsequently deleted under identity with the first conjunct (see Abe 1996). Note also that other approaches do not consider the second conjunct to have a full-fledged syntactic structure that is subsequently deleted but rather one single element that corresponds to the whole ellipsis (e.g. e in Pesetsky 1982).

(40) John can play something, but I don’t know what. (=38))

(41) John can play something, but I don’t know what [John can play]. (=39))
Secondly, there is the copying approach, according to which the antecedent in the first conjunct is copied into the position of the ellipsis in the second conjunct (Williams 1977, see also Chomsky 1993). Copying takes place at LF or Logical Form, the syntactic level that directly maps into semantics (the syntax-semantics interface). Therefore, the difference between the deletion and the copying mechanism is that the ellipsis site that appears in the rectangle in Figure 71 above is present all throughout the syntactic derivation and is subsequently

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30 Note that copying is the minimalist alternative to movement. In the MP (Chomsky 1993), the copy theory of movement proposes traces that are copies deleted at PF but interpreted at LF.
translated to Logical Form but deleted in the Phonetic Form according to the deletion approach, while according to the copying approach it is absent in syntax until it is copied in the Logical Form - though not in the Phonetic Form. In both cases, however, the syntactic component of the grammar makes use of empty syntactic categories (syntactic material that has no phonological reading) that counterpart the semantic site of the ellipsis. Note that an empty category is considered here as a gap or an element which is phonologically empty but which has “clear syntactic, semantic, and/or morphological values” (Sadock 2012: 13).

5.2.3 PA AND SLUICING

The Parallel Architecture accounts for the ellipsis in sluicing at the syntax-semantics interface. In this framework, it is assumed that “the sluiced wh-phrase is focus of an unstated question, in whose propositional structure the role of the wh-phrase is left inexplicit” (Culicover & Jackendoff 2005: 256). Figure 72 below illustrates the PA's treatment of the sluiced phrase in bold type in (42) from Merchant (fc.: 3, emphasis added). (43) is a "semantic translation" or the non-elided counterpart of (42). The rectangle in Figure 72 corresponds to the ellipsis site in brackets in (43). Figure 72 thus shows that the sluiced phrase "what" in the second conjunct is considered to be an orphan via indirect licensing (IL). An orphan acquires the semantic features and relations of its antecedent, to which it is linked via pragmatics. Indirect Licensing allows for the inheritance of syntactic features and relations by the orphan from its antecedent (Culicover & Jackendoff 2005: 258-259). In the semantic representation, the sluiced phrase is represented via a single, free variable or function (F) that is the propositional content of the question to be filled in by IL. Since this is the only part of the representations that corresponds to the ellipsis site, the “F” appears in a rectangle in Figure 72. This function F is preceded
by a question operator Q that binds the semantics of the wh-word, thus making the meaning of the wh-question (see *ibid*: 270). Therefore, the sluiced phrase lacks internal semantic structure. The free variable acquires its meaning via context and “is identified as the meaning of some previous clause in the discourse” (*ibid*: 257, see also Merchant fn.: 6).\(^{31}\)

(42) John can play something, but I don’t know **what**.

\((-40)\)

(43) John can play something, but I don’t know what [John can play].

\((-41)\)

**Figure 72. PA and sluicing**

Co-indexing allows for the identification between those phonological, syntactic and semantic structures that correspond to each other. Thus, the phonological word \([w_d \, w_o t ]\) corresponds to the sentential node \([S \, \text{what}_1 \, \text{ORPH}_{IL}]\) and to the semantic representation \([Q[F(\text{WHAT}_1)]]\). Note that, although there is no syntactic reconstruction of the ellipsis in sluicing, the syntactic node has sentential status S.

\(^{31}\) Note that the context is given remarkable relevance in the interpretation of a linguistic expression involving ellipsis, feature that PA shares with FDG, as will be seen in the following section.
5.2.4 FDG AND SLUICING

Functional Discourse Grammar accounts for sluicing by introducing unfilled semantic variables for elided material at the semantic (Representational) level. These variables are co-indexed with their correspondent antecedents in the Contextual Component, which keeps track of the previous linguistic discourse (see Hengeveld & Mackenzie 2008: 9, f.c.). Since the ellipsis site has meaning but makes no explicit reference or ascription, there is no pragmatic representation that corresponds to the semantic representation of the ellipsis. This is a pragmatics-semantics mismatch: "It is not the case that every predicate at the Representational Level will correspond to an Ascriptive Subact at the Interpersonal Level" (Hengeveld & Mackenzie 2008: 109). Nor does the ellipsis site have any corresponding primitive at the Morphosyntactic or Phonological Level. The absence of a corresponding primitive at the IL in the presence of a variable at the RL is a sign for the ML to implement sluicing such that "the Interpersonal Level shows what the Speaker does, while the Representational Level shows what s/he means" (ibid). Accordingly, Figure 73 below illustrates FDG's treatment of the sluiced phrase in bold type in (44) from Merchant (f.c.: 3). The rectangle in Figure 73 corresponds to the ellipsis within brackets in (45), a "semantic translation" or the non-elided counterpart of (44). The material in the rectangle, the ellipsis [John can play] in the second conjunct, is co-indexed with the semantic variables for “John can play” in the first conjunct “John can play something”, represented in Figure 74.

(44) John can play something, but I don’t know what. (=(42))

(45) John can play something, but I don’t know what [John can play]. (=(43))
As follows from Figure 73, Functional Discourse Grammar accounts for the sluiced phrase in bold type in (44) by introducing semantic variables for the ellipsis site in brackets in (45). The ellipsis [John can play] is thus represented only at the RL by means of the variables \((f_j) (x_i)_A\) for “play” and “John” and the operator of \(f_i\) “abil” for “can”. The Representational Level corresponds to the state of affairs “e” and not to a single individual \((x)\) for “what”, since the ellipsis site is semantically reconstructed. The semantic variables that represent the ellipsis are to be co-indexed with the lexically realized elements "John can play" in the first conjunct –to be also represented as \((f_j), (x_i)_A\), etc. as appears in Figure 74.

Figure 73. FDG and sluicing –the sluiced phrase

<table>
<thead>
<tr>
<th>IL</th>
<th>((R_j))</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL</td>
<td>((e; [(f; [(f_j) (x_i)_A (x_i)_A]) [(f_j) [(e;])]})</td>
</tr>
<tr>
<td>ML</td>
<td>((Cl; [(Np)_{obj} (Cl)]))</td>
</tr>
<tr>
<td>PL</td>
<td>((pp; /wot/ (pp)))</td>
</tr>
</tbody>
</table>

Figure 74. FDG and sluicing –the antecedent

<table>
<thead>
<tr>
<th>IL</th>
<th>((M; [(A; [(F; DECL(F_j)]) (P) (P) (P); C; [(T_j) (R) (T) (C)] (F_j)] (A_j) (M))))</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL</td>
<td>((p; [ep; [(e; [(f; [(f_j) (x_i)_A (x_i)_A]) [(f_j) [(e;)]}) (ep)] (p)]))</td>
</tr>
<tr>
<td>ML</td>
<td>((Le; [(Cl; [(Np)<em>{subj} (Vp) (Np)</em>{obj}) (Cl)]) (Le)]))</td>
</tr>
<tr>
<td>PL</td>
<td>((u; <a href="pp">(pp; /dəŋkənˈpleɪsəməθɪn/ (pp)</a>]) (u)]))</td>
</tr>
</tbody>
</table>

Note that FDG does not hold to lexical insertion. Lexical material is introduced at IL and RL.
The semantic variables representing the ellipsis site in the second conjunct have no corresponding referential or ascriptive subact(s). The only act representing the sluiced phrase “what” is therefore RI. Nor is there a morphosyntactic or phonological counterpart for the ellipsis site at the ML or PL -note, however, that the sluiced phrase “what” corresponds to a full clause CI at the ML (cf. PA). In FDG, there is no real syntactic reconstruction of ellipsis. Since the sluiced phrase is not considered to have syntactic structure, FDG is a non-structural model (see Merchant fc.: 6). That the morphosyntactic level is partly derived from the semantic level does not mean that it has to reflect it - thus differing from TGG, where syntax mirrors semantics and the meaning of a sluiced phrase is represented in semantics and correspondingly in syntax. Nor does the fact that the pragmatic bears the semantic level mean that it has to account for the ellipsis site. Rather, the FDG framework allows for a representational mismatch. As noted above, the pragmatics-semantics mismatch in the case of sluicing is a call to morphosyntax to implement sluicing. This allows for an account of ellipsis, meaning in the lack of form, at formulation (meaning levels) though not at encoding (form levels).

The ellipsis in the second conjunct in (44) is represented by means of more than one semantic variable that is co-indexed with the corresponding variables from the first conjunct -the antecedent. In general terms, the number of semantic variables that correspond to an ellipsis can vary from case to case, although the semantic representation of the ellipsis site normally has an internal structure. Note that this differs from sluicing in the PA, which makes use of a single free variable F. A further difference that FDG has with both TGG and the PA is the presence of a formalized Contextual Component where the representation of the first conjunct that contains the antecedent to the sluiced phrase is stored and can be retrieved in the second conjunct by means of co-indexation. Note, however, that PA does resort to the context (though not formalized) in order to explain how the content of the antecedent is retrieved.
5.2.5 CONCLUSIONS

Accounting for sluicing or any type of ellipsis by means of an empty formal category is commonplace in linguistic theory. The way in which a theory of language accounts for ellipsis strongly depends upon the main architectural tenets which the theory displays. If all levels of representation in a model are independent, the model may opt for representing the ellipsis at some semantic/pragmatic/contextual level of representation, though it will not necessarily have to do so at a formal (say, syntactic) level of representation. This is so, since interfaces are flexible and there may be mismatches between the semantic/pragmatic/contextual and the syntactic level of representation. Thus, if syntax does not mirror that which happens at semantics in the presence of ellipsis, the introduction of an abstract syntactic structure or empty category to provide the semantic representation of the ellipsis site with a syntactic counterpart can be avoided. If, on the other hand, the model is derivational and the formalization of one level fully depends upon another level, levels have to mirror each other. In this case, interfaces are transparent and mismatches tend to be avoided. A model of these characteristics usually opts for representing the ellipsis site at some formal level of representation as well as at the semantic/pragmatic/contextual level. In order to maintain form-meaning transparency, the introduction of an abstract syntactic structure or empty category to represent the elided phrase in syntax that mirrors semantics is mandatory.

Accordingly, in mainstream Generative Grammar the deletion approach (Ross 1969, Hankamer & Sag 1976, Merchant 2001, cf. Merchant 2003) carries an empty category (e.g. the primitive $e$ in Pesetsky 1982) that corresponds to the ellipsis site all the way throughout the syntactic derivation to be read by the syntax-semantics interface or Logical Form (and be passed on to semantics) but to be deleted by the syntax-phonetics interface or Phonetic Form (and not be passed on to phonetics). The ellipsis site that is carried all along the syntactic derivation to be later on
interpreted by semantics can alternatively have a full structure such as that of its antecedent. In both cases, the ellipsis site in syntax constitutes an abstract representation with no superficial counterpart. The copying approach (Williams 1977, Chomsky 1993) does not carry an abstract structure all the way throughout the derivation but does copy the syntactic structure of the antecedent into the Logical Form of the ellipsis site, which therefore possesses an abstract structure that is to be interpreted by semantics and that lacks a superficial counterpart. Both approaches to sluicing (the deletion and the copying approach) are a direct consequence of TGG's main architectural tenets. Since ellipsis is meaning in the lack of form, TGG obviously has to represent ellipsis at the semantic level. Now, since the semantic level is interpreted or derived from the syntactic level, and in order to maintain a transparent syntax-semantics interface, ellipsis is also represented at the syntactic level. The ellipsis site, therefore, has to be represented at the syntactic and at the semantic level of computation (otherwise, if the semantic is interpreted from the syntactic level, how did ellipsis get to the semantic level at all?). This is why both approaches show the ellipsis site at the syntactic level—in the deletion approach, all throughout the syntactic derivation up to the Logical Form to be deleted in Phonetic Form; in the copying approach, in the Logical Form once the ellipsis site is copied from the antecedent. Since the ellipsis site has no superficial syntactic counterpart, any attempt to represent it at the syntactic level leads to an abstract empty structure.

Contrarily, in the Parallel Architecture there are no empty syntactic categories or underlying syntactic structures for the ellipsis site. There is thus no syntactic counterpart to the semantic node free variable—the function representing the ellipsis site at the semantic level and the ellipsis is accounted for at the syntax-semantics interface via Indirect Licensing. In syntax, the sluiced phrase is represented as an orphan that is linked to its trace by means of indirect licensing and is not preceded or succeeded by any syntactic empty category.
Although the elided phrase is not represented in syntax, the higher node has sentential status. This approach to sluicing and ellipsis in general is a direct consequence of the PA's main architectural tenets. In the PA, all levels are fully autonomous and there is no real directionality to interfaces between levels (Jackendoff 2002: 198). Since no level’s representation is fully responsible for any other, inter-level mismatches may arise (Culicover & Jackendoff 1997: 197). The semantic level is independent (and not derived) from the syntactic level such that information that is coded at the semantic level does not have to be mirrored at the syntactic level of representation. Sluicing is then accounted for semantically (and at the syntax-semantics interface), though not syntactically. Since ellipsis is meaning in the lack of form, it is only logical that the elided phrase be represented in semantics. Because there is no architectural constraint why the model should represent the ellipsis site also at the syntactic level, the semantic free variable has no syntactic counterpart. There is therefore no need to introduce an empty category or abstract syntactic structure to counterpart the semantic side of the sluiced phrase in the PA.

In Functional Discourse Grammar, there is no empty syntactic category or abstract underlying syntactic structure for the ellipsis site in sluicing. There is thus no syntactic counterpart to the semantic variables that represent the ellipsis at the semantic level. The interrogative word that precedes the ellipsis site in sluicing does not include, nor is it preceded or succeeded, by an empty syntactic category. Although the ellipsis site is not represented in syntax, the higher node may have clausal status. This approach to sluicing and ellipsis in general is a direct consequence of FDG's main architectural tenets. In FDG, all levels are relatively autonomous. Although the model is clearly top-down in nature (Hengeveld & Mackenzie 2008: 1-3), mismatches between levels may arise. The semantic level is not derived from the syntactic level. Rather, the syntactic level is born from the semantic one. However, the semantics-syntax translation need not be one-to-one such that those semantic
variables representing the ellipsis site at the RL need not have a syntactic counterpart. This avoids having to resort to an empty category, which is a positive aspect for a theory of language that wants to be psychologically plausible as FDG (and PA). Sluicing in FDG is then accounted for semantically, though not syntactically. It is also accounted for contextually, since semantic variables for the ellipsis site are co-indexed with their antecedent in the Contextual Component and can only be fully retrieved via context. Since there is no architectural constraint that makes the formalization of the ellipsis site in syntax mandatory, there is no need to introduce a syntactic empty category or abstract syntactic structure to counterpart the semantic side of the ellipsis site.

5.3 SMALL CLAUSES

5.3.1 INTRODUCTION

A small clause is “a clausal structure lacking INFL[lection] and the copula” (Chomsky 1981: 107). This type of clause is usually referred to “as a clause with respect to meaning but not with respect to form” since “it lacks some formal elements required for a full clause, but it still has much of the same semantics as such a clause” (Lundin 2002: 11). The bold type in (46) and (47) below from Aarts (1992: 1, emphasis added) illustrate two different instances of what is understood to be a small clause by Aarts -or a tenseless clause as in Quirk et al (1985), Huddleston & Pullum (2002). Such tenseless or small clauses consist of a “proposition-type complement containing a subject-predicate relation which is not mediated by a copular element” (Haegeman & Lohndal 2011).

(46) They appointed her head of the department.

(47) I wanted her happy.
Following Aarts (1992), the small clauses in (46) and (47) are different in nature. Note that (46) offers a relation between “her” and “head of the department”, on the one hand, and another relation between “appointed” and “her”, on the other. These relations are illustrated in (48a) and (48b) respectively. (47), on the other hand, provides a relation between the object “her” and the predicative element “happy” that is illustrated in (49a) and that is similar to that in (48a), but it creates a relation between the verb “wanted” and the structure “her happy” that is illustrated in (49b) and that is different to that in (48b). (50) and (51) offer a semantic translation for (46) and (47) respectively. Note that “her happy” in (47) constitutes a constituent whereas “her head of the department” in (46) does not.

(46)  a. They appointed [[her] [head of the department]].
     b. They [[appointed] [her]] head of the department.

(47)  a. I wanted [[her] [happy]].
     b. I [[wanted] [her happy]].

(48)  a. They appointed [[her] [head of the department]].
     b. They [[appointed] [her]] head of the department.

(49)  a. I wanted [[her] [happy]].
     b. I [[wanted] [her happy]].

(50) They appointed her to be head of the department.

(51) I wanted her to be happy.

Note also that (46) can be passivized whereas (47) cannot. This is illustrated in (52) and (53). In the following, I will concentrate on instances of the type (47).

(52) She was appointed head of the department.

(53) *She was wanted happy.

33 Note that a copula has been introduced. Note also that some consider small clause phenomena to form a constituent (Williams 1974, 1983), while others do not (Chomsky 1981).
Small clauses provide a non-default syntax-semantics mapping. They have the meaning of a full clause, but the syntax of a smaller unit. In such non-default mappings between meaning and form, an empty syntactic category may be introduced to represent the syntax of the copula and the inflection of the small clause. A linguistic model can choose to represent the meaning of the copula and the inflection of the small clause at semantics or, alternatively, to do so at syntax and introduce a phonetically null element at syntax to counterpart semantics. Note that this discussion is based on English and on the assumption that this language uses copular elements that indeed contribute to the meaning of a sentence, either by ascribing a property or by equating two referents.

If a theory of language represents the copula and inflection at a meaning but not at a form level, a mismatch (as defined in Francis & Michaelis 2000) is created in that what is present at a semantic level is absent at formal levels of representation. If, on the contrary, a theory of language assumes that the copula and inflection contribute to the meaning but lack an overt, though not a covert syntactic form, a mismatch syntax-semantics is avoided in that the semantic representation of the small clause’s meaning is provided with a fully matching syntactic counterpart. In order to do so, an empty syntactic category or abstract structure may be introduced for the copula (and eventually, inflection). The creation or avoidance of a mismatch in the case of small clauses, in turn, depends on the whole architecture of the theory -i.e. whether the theory at hand can allow for a mismatch, which kind of syntax-semantics interface it displays, etc.

Representing the copula at syntax and also at semantics is a logical move if semantics is interpreted from syntax, since in such a case the meaning of the copula appearing in semantics has to come from somewhere in the syntax. In those linguistic frameworks in which the copula of a small clause is considered to be both semantic and formal, there should be no need to create a mismatch, since semantic elements have formal
counterparts – e.g. phonetically null categories. On the contrary, if the copula of a small clause is represented at semantics but not at syntax, the theory of language at hand must allow for a flexible interface that can account for such syntax-semantics interface in that the syntactic and the semantic levels of representation are (at least partly) independent from each other.

5.3.2 TGG AND SMALL CLAUSES

Generative Grammar has developed different accounts of small clauses, some of which do not consider such structures to form a single constituent. Among those approaches that do consider small clauses to form a separate syntactic node, some introduce empty nodes (Aarts 1992, Chomsky 1981, Radford 1988, Stowell 1981, 1983), while some do not (based on the theory of predication, Williams 1980, 1983).

Figures 75 and 76 below offer two varying accounts of the small clause “her happy” in “I wanted her happy” in (54) from Aarts (1992: 1, emphasis added) within two variants of the GG framework. The small clause “her happy” is contained within the rectangle in both Figures. Figure 75 offers a small clause (SC) that is constituted by two daughter nodes: a subject “her” and a predicate “happy”. Note that “her” is not a direct object of the verb “wanted” but the subject of the small clause.

(54) I wanted her happy.  

(=47))

34 Although being the subject of the SC, “her” is not located at Spec such that this analysis does not conform to X-bar syntax. Note also that two maximal projections cannot be sisters unless they are adjuncts (see Haegeman 1994: 124).
Figure 75. TGG and small clauses: no AgrP

Figure 76. TGG and small clauses: AgrP
Figure 76 offers an alternative representation of the small clause “her happy” such that the subject “her” and the predicate “happy” are the specifier and complement of an additional head that appears between them, “Agr” (agreement) (see Haegeman 1994). Note that, whereas the account in Figure 75 does not introduce any empty category in the small clause, the head of the small clause “-tns -agr” (-tense -agreement) in Figure 76 is an empty category itself that has a semantic (“to be”) though not a surface syntactic or phonological counterpart.

5.3.3 PA AND SMALL CLAUSES

In an attempt to maintain syntax as simple as possible (see Culicover & Jackendoff 2005), the Parallel Architecture reflects the full meaning of small clauses in the semantic structure, though such a richer representation of the small clause containing the meanings of the copula and inflection of the small clause is not necessarily mirrored in the syntactic or in the phonological structure. Note that, as a general rule, the PA does not consider a small clause of the V-NP-Pred type as such unless a pseudo-cleft is possible (ibid: 134) (e.g. “What I wanted was her happy” for (55) below).

Figures 77-79 below offer possible representations of the phonological, syntactic and conceptual structures of “I wanted her happy” in (55) from Aarts (1992: 1, emphasis added) following the PA conventions. The elements “her happy” are contained within the rectangle in all the levels. Note that the phonological structure does not represent “her” and “happy” as the only daughters of a common node (small clause), whereas they do appear as a single constituent in the semantic and in the syntactic structures. In the phonological structure, “her” corresponds to Wd₅ (phonological word 5) and “happy” to Wd₆, which equally contribute to form the utterance together with Wd₁ and Wd₄ (the latter being constituted by Wd₂ and the affix Af₁). In the syntactic structure, “her” and “happy” constitute a
small clause SC made up by two nodes (N_5 and A_6). The small clause has no full clausal status in syntax, which means that no empty syntactic category needs to be introduced to represent the copula. The meaning of the small clause is however fully expressed in the semantic structure, which introduces the state concept BE that bears the two nodes for the person HER_5 and the state HAPPY_6 that constitute the small clause “her happy”. Note that this mechanism avoids the introduction of an empty syntactic category, since the full meaning of the small clause that is represented at semantics is not provided with a fully matching syntactic counterpart.

(55) I wanted **her happy**.  

Figure 77. PA and small clauses: phonological structure

---

35 The concept BE is a State-function that takes its arguments from the subject and from the predicate positions and that can be further specified with subindexes for location, possession, etc. (Jackendoff 1990: 24-27).
5.3.4 FDG AND SMALL CLAUSES

Functional Discourse Grammar accounts for small clauses partly at the semantic level, though not at the remaining levels of representation. In this framework, the absent copula is not directly represented at any of the levels. The rectangles in Figure 80 below offer a representation of the interpersonal, representational, morphosyntactic and phonological structures of the elements “her happy” in “I wanted her happy” in (56) from Aarts (1992: 1, emphasis added) within the framework of FDG.
(56) I wanted her happy. (=(55))

Figure 80. FDG and small clauses

Note that the structure “her happy” forms one constituent at the semantic and morphosyntactic levels of representation. At the representational level, “her” corresponds to the undergoer individual \((x_j)_U\) and “happy” to the property \((f_i)_L\), both of which constitute the unit \((e_i)\). Note that \((e_i)\) is the object/argument of \((f_i)\). At the morphosyntactic level, “her” corresponds to the noun phrase \((Np_j)_{Obj}\) and “happy” to the adjective phrase \((Ap_i)\), both of which constitute a clause \((Cl_j)_{Obj}\) that is the object of the higher clause \((Cl_i)\). At the interpersonal and phonological levels, “her happy” does not constitute a separate constituent. At the interpersonal level, “her” corresponds to the referential act \(R_j\) and “happy” to the ascriptive subact \(T_j\). At the phonological level, “her” corresponds to the phonological phrase \((PP_j)_{/\text{fr\text{'ntd}/}}\) and “happy” to the \((PP_k)_{/\text{hæpi/}}\). Therefore, “her” and “happy” do not constitute a higher pragmatic or phonological layer by themselves. Note also that the copula that appears as an inflectional head in syntax in GG and in semantics as \(BE\) in the PA is nowhere to be found in FDG. The ascription of the property “happy” to “her” takes no actual verb, which excludes
its representation from encoding levels. However, the semantic category \( f_k \) is introduced to join the elements that form the small clause \( (x_j)_{ij} \) and \( (f_i) \) for “her” and “happy” respectively. Other abstract or potential empty syntactic categories are thus excluded from all levels of representation in the formalism.

5.3.5 CONCLUSIONS

Whether a linguistic theory introduces or avoids empty syntactic categories to represent the copula of a small clause at the syntactic level depends upon the main architectural tenets of the theory. Accordingly, Generative Grammar, the Parallel Architecture and Functional Discourse Grammar, having different architectures, offer various accounts of small clauses that in turn have a varying impact upon the level of abstractness of the theory. Some accounts of Generative Grammar do not introduce any empty category in the small clause, since they only posit phrasal nodes for those elements that are present in the overt syntax of the small clause (Aarts 1992). However, other accounts of Generative Grammar introduce an empty syntactic node such as “-tms -agr” (tense -agreement) as the head of an inflectional phrase (IP) or an agreement phrase (AgrP) (Haegeman 1994) that has a semantic though not a surface syntactic or phonological counterpart. This Agreement node is a device of Generative Grammar to account for the full semantic interpretation at the syntactic and at the semantic level of representation. This is obviously related to the derivational nature of TGG, which makes the semantic and the syntactic levels interdependent, and to the directionality of the model, which makes syntax bear semantics. This means that the semantic level, being computed from the syntactic one, imposes restrictions upon the latter. Thus, whatever is present at the semantic level (the meaning of the copula of “I wanted her (to be) happy”) has to be accounted for also at syntax. The interface that arises is therefore transparent.
Contrarily, the Parallel Architecture offers a different case scenario. In this framework, small clauses do not lead to the introduction of an empty syntactic category for the copula - the only empty nodes that the PA allows for are traces of A’ dependencies (Jackendoff 2010a). In the case of small clauses, which form a syntactic constituent, the interpretation of the small clause is accounted for at the semantic level of representation by introducing a state copula. A syntactic counterpart for the state verb BE is not necessary, since the syntactic and the semantic levels of representation are not derived from each other. The interface that arises is flexible.

Finally, Functional Discourse Grammar does not introduce any empty syntactic category to represent the copula. Since the direction of this model is from formulation to encoding, syntax is not responsible for semantics - as is the case in TGG. Rather, anything appearing in syntax would in principle have to be accounted for firstly in semantics. However, there is no formal feature in small clauses that would impose representational pressure upon formulation, since the copula is not represented at the ML. Furthermore, the introduction of a primitive at encoding to represent the copula would not necessarily lead to the introduction of an empty node at formulation, since the hybrid nature of the model regarding derivationality would allow for an inter-level mismatch.

5.3 **PSEUDO-STRUCTURES**

5.3.1 **INTRODUCTION**

Pseudo-structures are “pseudo” in that the information they provide at different levels of the grammar is contradictory. A pseudo-coordinate structure (Culicover & Jackendoff 1997) is one that is coordinate at one (syntactic) level of representation,
though not at the semantic level\textsuperscript{36}. This is referred to as a pseudo-coordinate structure. Parallely, a pseudo-subordinate structure (Yuasa & Sadock 2002) is one that is subordinate at one (syntactic) level of representation, though not at the semantic level. Of course, a pseudo-coordinate structure could also be called a pseudo-subordinate and vice versa if the first point of reference were the semantic rather than the syntactic level. (57) (Culicover 2010: 6) illustrates an instance of pseudo-coordination (independence or coordination at the syntactic level and dependence or subordination at the semantic level). (58) (Mankell 2009: 10) illustrates an instance of pseudo-subordination (dependence or subordination at the syntactic level and independence or coordination at the semantic level). These two phenomena are discussed in more detail in sections 5.3.2. and 5.3.3.

(57) One more step (and) I’ll shoot.

(58) This had improved the old man’s moods, which were sometimes unbearable.

Languages that show instances of such syntax-semantics mismatches range from Korean (Kwon 2004) to English (Culicover & Jackendoff 1997), Japanese (Yuasa & Sadock 2003) and Tsez (Polinsky 2002, 2003, cited in Kwon 2004). The existence of utterances that show symmetric properties at one level but asymmetric properties at another can be seen to prove the existence of independent levels of representation, though they come at a theoretical cost, namely, the loss of default isomorphic rules of correspondence between levels of grammar (see Yuasa & Sadock 2002: 109). Assuming that a structure can be symmetric at syntax but asymmetric at semantics or vice versa depends upon the main architectural tenets of a theory of language. If the theory of language at hand shows independent, non-derived levels of representation, it will allow for such

\textsuperscript{36}For an in-depth analysis of the semantics of coordination, see Lang (1984).
mismatches and pseudo-structures will arise. If, on the other hand, the theory of language at hand shows inter-dependent, derived levels of representation, such mismatches will not be allowed and contradictory information will have to be accounted for elsewhere. In what follows, the concepts of pseudo-coordination and pseudo-subordination are introduced and applied to TGG, PA and FDG. Special attention will be paid to the role that each theory’s architectural tenets play in choosing how to represent these pseudo-structures, and whether they are conceived as “pseudo” or contradictory at all.

5.3.2 PSEUDO-COORDINATION

5.3.2.1 INTRODUCTION

A coordinate structure is “a structure in which two or more elements are joined in such a way that each of them can be the head of that structure” whereas a subordinate structure is “a structure in which two elements are joined in such a way that one is dominated by the other” (Kwon 2004: 101). Of course, the notions of coordination and subordination can be applied to different levels of the grammar as semantics or syntax such that a structure can be coordinate or subordinate in syntax or semantics according to independent syntactic and semantic criteria. In this sense, coordination and subordination are notions that refer to the relations of inter-(in)dependence that exist among those sub-structures that make up the whole structure under examination. Although “the prototypical subordinate structure or coordinate structure may be subordinate or coordinate throughout the components of grammar ... there is a possibility of mismatches” such that a coordinate structure in syntax can be subordinate in semantics and vice versa –“pseudo-coordination” and “pseudo-subordination”, respectively (Yuasa & Sadock 2002: 90). Pseudo-coordination refers therefore to a structure whose sub-structures are related symmetrically at the
level of syntax and asymmetrically at the semantic level (see Kwon 2004). Yuasa & Sadock’s term “pseudo-subordination” builds on Culicover & Jackendoff’s “left-subordinating and” or Lsand, whereby main coordinate clauses in syntax correspond to one main clause and one subordinate clause in semantics. This brings about a mismatch between what they call syntactic structure (SS) and conceptual structure (CS) (Culicover & Jackendoff 1997). (59) below offers an instance of pseudo-coordination (from Culicover 2010: 6, see also Culicover 1970, 1972, Culicover & Jackendoff 1997). The “left-subordinating and” receives its name from the fact that “and” subordinates the conjunct that appears to its left as shown in (59) (also in (57)).

(59) One more step (and) I’ll shoot. [If A, then B.] (If you take one more step, I’ll shoot)38

(59) above shows an apparently coordinate structure that is however best interpreted as the conditional “if p, then q” (p → q) rather than as the logical, truth-conditional (p ∧ q).39 (a-f) below illustrate some reasons why left-subordinating and can be considered to be ontologically different from ordinary andC (see Jackendoff & Culicover 1997). These differences are illustrated in (60)-(65) below based on (59). (60a-65a) are cases of ordinary, logical andC and (60b-65b) are cases of left-subordinating Lsand. (60c-65c) are ungrammatical instances in which Lsand is proved to lack the typical properties of logical andC. The following show properties that left-subordinating and does not share with logical and:

37 Kwon (2004) analyzes the Korean ko-construction (Ana does X while Lucia does Y-Ana X and Lucia Y) as being syntactically symmetrical and semantically asymmetrical (like in English), and therefore an instance of pseudo-coordination.

38 The coordinating conjunction can possibly not be omitted in the absence of two full clauses (Jackendoff, p.c.).

39 Note that (59) can also be interpreted as a warning. The warning “I’ll shoot”, however, relies on the condition that the addressee takes one more step.
a) The order of the conjuncts in and\textsubscript{C} can be altered whereas in \textsubscript{LS} and it cannot. (60a) illustrates that logical and\textsubscript{C} allows for an alteration in the order of the conjuncts “you take one more step” and “I shoot” whereas (60c) shows that left-subordinating and\textsubscript{LS} does not allow for such an alteration in the order of the conjuncts (cf. the grammatical (60b, adapted from Culicover 2010: 6)). The order of the conjuncts cannot be altered with \textsubscript{LS} because the condition needs to precede the result.

(60)  
\begin{enumerate}
  \item I shoot and\textsubscript{C} you take one more step.
  \item You take one more step \textsubscript{LS} and I shoot.
  \item *I shoot \textsubscript{LS} and you take one more step.
\end{enumerate}

b) And\textsubscript{C} allows for the use of any tense whereas \textsubscript{LS} and does not. (61a) illustrates that logical and\textsubscript{C} allows for tenses other than the general present tense whereas (61c) illustrates that left-subordinating \textsubscript{LS} does not allow for all tenses if the conditional meaning is to be maintained (cf. the grammatical (61b)). This is related to the incompatibility of the conditional sense with certain tenses

(61)  
\begin{enumerate}
  \item You have taken one more step and\textsubscript{C} I have shot.
  \item You take one more step \textsubscript{LS} and I shoot.
  \item *You have taken one more step \textsubscript{LS} and I have shot.
\end{enumerate}

c) And\textsubscript{C} allows for any number of conjuncts whereas \textsubscript{LS} allows for only two conjuncts or else it loses its subordinate meaning. (62a) illustrates that logical and\textsubscript{C} imposes no restrictions as to the number of conjuncts whereas left-subordinating \textsubscript{LS} does (62c) if the asymmetric meaning is to be maintained (cf. the grammatical (62b)).
(62)   a.  You take one more step \(\text{and}_C\) I go get some coke
\(\text{and}_C\) I shoot.

b.  You take one more step \(\text{Lsand}\) I shoot.

c.  *You take one more step \(\text{Lsand}\) I go get some coke \(\text{Lsand}\) I shoot.

d) \(\text{And}_C\) allows for gapping whereas \(\text{Lsand}\) does not. (63a) illustrates that gapping (ellipsis of verbal elements, see Merchant fc.) is possible in the second conjunct of a logical \(\text{and}_C\) coordinate structure whereas (63c) shows that the same is not possible with left-subordinating \(\text{Lsand}\) (cf. the grammatical, non-gapped (63b)).

(63)   a.  You take one more step \(\text{and}_C\) [you take] the shot.

b.  You take one more step \(\text{Lsand}\) you take the shot.

c.  *You take one more step \(\text{Lsand}\) [you take] the shot.

e) \(\text{And}_C\) allows for right-node raising whereas \(\text{Lsand}\) does not. (64a) illustrates that logical \(\text{and}_C\) can show right-node raising (ellipsis in the first conjunct, see Hudson 1976) whereas (64c) shows that left-subordinating \(\text{Lsand}\) cannot (cf. the grammatical, non-elided (64b)).

(64)   a.  You take one more step before [X] \(\text{and}_C\) I shoot after everyone leaves.

b.  You take one more step before everyone leaves \(\text{Lsand}\) I shoot after everyone leaves.

c.  *You take one more step before [X] \(\text{Lsand}\) I shoot after [everyone leaves]_x.
f) $\text{And}_C$ allows for CP coordination whereas $\text{LSand}$ does not—only IP coordination (Culicover & Jackendoff 1997: 198). (65a) shows that logical $\text{and}_C$ conjoins CPs whereas left-subordinating $\text{LSand}$ joins IPs/TPs (65b) (cf. the ungrammatical (65c)).

(65)

a. You are aware [[that you take one more step]$_{\text{CP}}$ $\text{and}_C$ [that I shoot]$_{\text{CP}}$].

b. You are aware that [[you take one more step]$_{\text{IP}}$ $\text{LSand}$ [I shoot]$_{\text{IP}}$].

c. *You are aware [[that you take one more step]$_{\text{CP}}$ $\text{LSand}$ [that I shoot]$_{\text{CP}}$].

The fact that logical $\text{and}_C$ conjoins CPs and left-subordinating $\text{LSand}$ conjoins TPs has led some authors to posit that other uses of $\text{and}$ showing a similar distribution should be grouped together with left-subordinating $\text{LSand}$ (see Bjorkman 2010, cf. Culicover & Jackendoff 1997: 212-213). (66) below (based on (59)) shows another instance of syntactic coordination that also shows an asymmetric relation between the conjuncts with a causal and/or temporal interpretation. (67a) illustrates that this type of $\text{and}$, just as left-subordinating $\text{LSand}$, coordinates IPs rather than CPs (67b, logical reading).

(66) I took one more step $\text{and}$ he shot.

(67)

a. She knew that [[I had taken one more step]$_{\text{IP}}$ $\text{and}$ [he had shot]$_{\text{IP}}$].
   (temporal/causal reading) [After A, B] [Because A, B]

b. She knew [[that I had taken one more step]$_{\text{CP}}$ $\text{and}$ [that he had shot]$_{\text{CP}}$].
   (logical reading) [A ^ B]
All the above-mentioned differences make it clear that logical \textit{and}_C left-subordinating \textit{Lsand} show different properties. An option to interpret left-subordinating \textit{Lsand} is to assume that the structures are coordinate both semantically and syntactically and attribute the asymmetric reading to pragmatics\cite{Grice1975}. It could thus be argued that the conditional interpretation is indeed not possible in certain syntactic contexts, which does not mean that there exist two different \textit{ands}\cite{GarciaVelasco}. An alternative option to account for these structures is to assume that the subordinating interpretation belongs within semantics rather than within pragmatics, in which case the semantic scenario offers an asymmetric relation between the two syntactically symmetric structures. In this case, there are two further possibilities: the syntactic structure is symmetric, in which case a syntax-semantics mismatch is created; the syntactic structure is asymmetric, in which case there is no such mismatch. Building the asymmetry into syntax comes at a theoretical cost. Following Culicover \& Jackendoff\cite{CulicoverJackendoff1997a}, if \textit{Lsand}-like conjuncts were considered to be syntactically subordinating, there should be movement of the left-subordinating conjunction from [[S\textsubscript{1} \textit{Lsand}\textsubscript{S} S\textsubscript{2}]]\textsubscript{S} into [[\textit{Lsand} S\textsubscript{1} S\textsubscript{2}]]\textsubscript{S} in order to occupy the initial position of the subordinate clause as is common in syntactically asymmetric scenarios (because/\textit{if} S\textsubscript{1}, then S\textsubscript{2}). Furthermore, the position of the \textit{Lsand} embedded sentence would always be [[S\textsubscript{1} \textit{Lsand}\textsubscript{S} S\textsubscript{2}]]\textsubscript{S} and never [[S\textsubscript{2} \textit{Lsand} S\textsubscript{1}]]\textsubscript{S} (as opposed to normal conditional subordination, in which both positions are possible). A further option to account for left-subordinating \textit{Lsand} is to assume that logical \textit{and}_C and left-subordinating \textit{Lsand} provide different semantic interpretations and that this is related to a different syntactic distribution of the conjunction. If logical \textit{and}_C is taken to involve CP coordination and left-subordinating \textit{Lsand} is taken to involve coordination of constituents that are smaller than the clause\cite{Bjorkman2010}, the need to create a syntax-semantics mismatch disappears.

\textsuperscript{40} Bjorkman\cite{Bjorkman2010} relates the size of the conjuncts to the reading of \textit{and}
5.3.2.2 TGG AND PSEUDO-COORDINATION

Generative Grammar offers various accounts of coordination. Some of them take the conjunction as the head of the structure while some do not. Figure 81 below offers a possible representation of (68) whereby the coordinate conjunction is the head of the whole structure, the first conjunct is the specifier and the second conjunct is the complement (see Munn 1987). Figure 82 offers an alternative account in which the coordinate conjunction is not the head of the whole construction (see Radford 1988, Jackendoff 1977, cited in Gáspár 2005). Rather, there are three elements that are conjoined, which in theory goes against the binary-branching structure of generative trees.

(68) You take one more step and I shoot.

(adapted from Culicover 2010: 6)

The relation between the two conjuncts in Figure 81 is one of asymmetry whereas in Figure 82 it is one of symmetry. If Generative Grammar has a semantic component that is derived from the syntactic one, the asymmetric relation that appears in the semantics of (68) above (p \( \rightarrow \) q) should be mirrored in syntax (if inter-level matching is to be maintained) by embedding the first conjunct into the second. This does not happen in the approach illustrated in Figure 82, in which the first and the second conjunct, and the conjunction all have the same status. Nor does it happen in Figure 81, in which the first conjunct is not embedded into the second one. Rather, the first conjunct is the specifier of a new head and ("K" for conjunction) -but AND is not the appropriate semantic category if pseudo-coordination is to be assumed. If (68) were to be considered semantically subordinate, this would create a syntax-semantics mismatch.

such that CP coordination leads to logical reading and IP coordination to an asymmetric reading, in which case the correspondence syntax-semantics is of a one-to-one nature.
Figure 81. TGG and pseudo-coordination: *and* is the head

Figure 82. TGG and pseudo-coordination: *and* is not the head
However, (68) could be considered to be semantically coordinate and the subordinate interpretation could be attributed to some kind of inference (of the kind conceived in Grice 1975) such that Figure 82 would reflect the semantic symmetry (the asymmetry being pragmatic) in the syntactic representation, thus avoiding a mismatch.

### 5.3.2.3 PA AND PSEUDO-COORDINATION

The Parallel Architecture possesses a syntactic and a semantic dimension that are governed by independent structural principles, which means that pseudo-coordination can be explained by means of a syntax-semantics mismatch (see Yuasa & Sadock 2002: 107). Figures 83-85 below offer possible representations of the phonological, syntactic and conceptual structures of (69). Note that the syntactic structure is an ordinary coordinate one in this framework whereas *and* is translated into IF, THEN into the conceptual structure. This could be seen as a consequence of the fact that the PA does not have a separate pragmatic level such that this type of information is accounted for at semantics. This is proof that “there can be conceptual structure subordination expressed by syntactic coordination, a clear syntax-semantics mismatch” (Culicover & Jackendoff 1997: 197).

(69)  *You take one more step and I shoot.*  

(69)  (=(68))
Figure 83. PA and pseudo-coordination: phonological structure

Phonological structure

\[
\text{Utterance}_{11}
\]

\[
\text{Phon Ph}_{6}
\]

\[
\text{Phon Ph}_{10}
\]

\[
\text{Wd}_1 \quad \text{Wd}_2 \quad \text{Wd}_3 \quad \text{Wd}_4 \quad \text{Wd}_5
\]

\[
\text{ju} \quad \text{teik} \quad \text{wan} \quad \text{mo: step}
\]

or

\[
[\text{Utterance} [\text{Phon Ph}_1 \text{Wd}_1 \text{ju}_1 [\text{Wd teik}_2 [\text{Wd w} \text{n}_3]
\]

\[
[\text{Wd mo:}_4 [\text{Wd step}_5]_6 [\text{Phon Ph}_1 \text{Wd on}_7 [\text{Wd a}_8]
\]

\[
[\text{Wd fut}_9]_{10}]_{11}
\]

Figure 84. PA and pseudo-coordination: syntactic structure

Syntactic structure

\[
\text{S}_{11}
\]

\[
\text{S}_5
\]

\[
\text{S}_0
\]

\[
\text{K}_0
\]

\[
\text{S}_{10}
\]

NP

\[
\text{N}_1
\]

\[
\text{V}_2
\]

\[
\text{NP}
\]

\[
\text{V}_3
\]

\[
\text{NP}
\]

\[
\text{K}_7
\]

or

\[
[5 [5 [\text{NP } N_2] [\text{VP } V_2]]
\]

\[
[\text{NP } [Q_3 [\text{Deg}_4 [N_5]]]_6
\]

\[
[\text{K}_7 [5 [\text{NP } N_9] [\text{VP } V_9]]_{10}]_{11}
\]

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Figures 83-85 illustrate the independence between the levels in the PA: in the phonological structure, and belongs within the second conjunct in Phonological Phrase. In the syntactic structure, it is a head that appears in between two other sentence heads $S_6$ and $S_{10}$. In semantics, it is translated as IF, THEN and not as AND in an attempt to show semantic asymmetry: “Syntax is therefore autonomous, in that it is not reducible to semantic structure, and semantic structure is not isomorphic to any level of syntactic structure such as LF” (Culicover & Jackendoff 1997: 196) such that there is room for an autonomous syntactic structure that cannot be reduced to semantics and a conceptual structure that cannot be reduced to syntax (ibid: 216). To posit independent levels comes at a cost, since correspondence rules are not always transparent. In the PA, a correspondence rule between the syntactic and the conceptual structures would specify that the coordinate conjunction and is to be interpreted as semantically subordinate (conditional) under particular circumstances (no gapping, appropriate tense, etc, see (60)-(65)). Once one assumes that the syntactic and the semantic structures can be mismatching, it needs to be determined to what extent those mismatches can appear (see ibid: 200-201).

### 5.3.2.4 FDG AND PSEUDO-COORDINATION

Functional Discourse Grammar shows a strong top-down directionality that allows linguistic levels to be independent
enough as to show inter-level mismatches in instances of pseudo-coordination. Figure 86 below represents (70). Note that the clause Cl₁ “you take one more step”, the clause Cl₂ “I shoot” and the grammatical word Gw and appear in a symmetric relation at the morphosyntactic level but their semantic counterparts e_j and e_i do not – e_j modifies e_i. This dependency is further indicated at the Representational Level by indicating the function Cond(itional) for the SoA e_j that is dependent on e_i. At the Interpersonal Level, both clauses correspond to one discourse act A₁. At the Phonological Level, this is mirrored in that the whole utterance corresponds to a single intonational phrase IP₁ (see Hengeveld & Mackenzie 2008: 53-56, 432). 

(70) You take one more step and I shoot. (= (69))

**Figure 86. FDG and pseudo-coordination**

44

---

41 Cf. co-subordination (one dependent, one independent clause) and equiordination (two mutually dependent clauses) (Hengeveld & Mackenzie 2008: 309).

42 Note that coordination takes place between states of affairs and not between episodes since tense marking in “you take one more step” and “I shoot” are not independent (see ibid 2008: 150).

43 In some cases, particularly if “and” is absent, constructions such as this may constitute two intonational phrases.

44 Figure 86 is simplified. “One more step” could e.g. be fully represented as RL (xₖ₁: (fₙ: step (l₁)) (xₖ₈): (fₙ₉: more (fₙ₆)) (xₖ₈): (fₙ₇: one (fₙ₅)) (xₖ₈)).

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5.3.3 PSEUDO-SUBORDINATION

5.3.3.1 INTRODUCTION

The term “pseudo-subordination” is used to refer to the type of relation established between two clauses that make up a complex utterance and are related asymmetrically in syntax but symmetrically in semantics, thus creating a syntax-semantics mismatch. These clauses are related by subordination in syntax and by coordination in semantics, the relation being therefore not entirely subordinate - hence the term “pseudo”. Although this term considers both the semantic and the syntactic levels of representation, it still remains somewhat syntactocentric, for syntactically subordinate clauses that are semantically coordinate are called “pseudo-subordinate” and not “pseudo-coordinate”. The existence of such structural mismatches provides proof that the semantic and the syntactic component are to be viewed as autonomous levels of representation to which the coordinate or subordinate properties can be independently attributed (Yuasa & Sadow 2002: 107).

An example of pseudo-subordination is provided by non-restrictive relative clauses, which syntactically depend upon the main clause, yet they have the semantic contribution of a fully independent clause\(^{45}\). De Vries (2002, 2006) introduces “specifying coordination” for this type of structures, which specify the antecedent yet contribute to the semantic interpretation of the whole utterance similarly to the “and” conjunction. Thus, the non-defining relative clause could be seen as being independent from the main clause from a semantic

\(^{45}\) Cf. Yuasa (2004), where non-restrictive clauses are also seen as semantically independent and syntactically dependent but a difference is made between independent clauses (those separated by a full stop) and the (also independent) conjuncts in a coordinate structure. Since coordination is seen as the conjunction of two independent utterances, no distinction between independent clauses and the conjunct of coordinate structures is made in this thesis.
point of view. Non-restrictive relative clauses, as opposed to restrictive relative clauses, do not limit the reference of the nominal phrase they refer to (Andrews 1985). Thus, “[t]he function of an appositive is to add information about an already specified individual; it can itself never be the specification by virtue of which the NP in which it occurs is definite” (Jackendoff 2010a: 333). The extract below from Mankell’s The Dogs of Riga (2009: 10, emphasis, italics and underlined added) illustrates the difference between restrictive and non-restrictive relative clauses. The bold type in (71) corresponds to two non-restrictive relative clauses while the italics correspond to a restrictive relative clause. The underlined noun phrases are the antecedents of the corresponding relative clauses. Note that, whereas the referent of “a home helper” is restricted by the restrictive relative clause “who visited him regularly”, the referents of “his father” and “the old man’s moods” are not restricted by the non-restrictive relative clauses “who live[d] in a little house near Löderup” and “which were sometimes unbearable”, respectively.

(71) Before going to bed, he’d phone his father, who lived in a little house near Löderup. Ever since his father had become confused and gone wandering through the night in his pyjamas the year before, Wallander had made a habit of ringing him every day. He knew it was as much for his own sake as for his father’s – he always felt guilty about not visiting him more often. Still, after that incident the year before, his father had a home helper who visited him regularly. This had improved the old man’s moods, which were sometimes unbearable.

The bold type in (72) below illustrates a further non-restrictive or non-defining relative clause.\textsuperscript{46}

(72) Mary, who has two young children, has a part-time job in the library.

\textsuperscript{46}Example taken from Oxford Dictionaries: http://oxforddictionaries.com/words/comma (emphasis added).
Note that the non-restrictive relative clause in bold type in (72) above shares properties of dependent and independent clauses (following some of the parameters in Yuasa 2005b: 535-538 for an analysis of pseudo-independent clauses). There are several reasons why the bold type in (72) is to be considered subordinate. Firstly, the intonation is not falling as it usually is in independent declarative sentences. Also, the constituent order in a translation of (72) in an SOV language like German is that of a subordinate structure as illustrated in (73) below such that the verb “hat” (has) appears at the end.

(73) Mary, **die zwei junge Kinder hat**, hat eine Halbteilstelle in der Bibliothek.

Mary, who two young children has, has a part-time job in the library.

Finally, the dependent clause cannot be separated from its head noun unless it is “heavy”. This is clear in (75), an alternative for (74), in which the relative clause is extraposed due to its length such that “iconic order, which remains a default preference” is “overridden by other independent communicative strategies” (Hengeveld & Mackenzie 2008: 285, see also *ibid*: 87).

(74) Mary hat eine Stelle, die ihr hilft um etwas extra Geld zu bekommen, gekriegt.

Mary has a job in the library, that her helps to some extra money get, got.

(75) Mary hat eine Stelle gekriegt, die ihr hilft um etwas extra Geld zu bekommen.

Mary has a job in the library got, that her helps to some extra money get.
However, there are other reasons why the bold type in (72) should be considered symmetric. The most obvious reason is that the non-restrictive relative clause can be paraphrased as an independent clause such that one obtains the coordinate structure in (76) below.

(76) Mary has a part-time job in the library and Mary has two young children.

Furthermore, tense in the syntactically main clause and in the syntactically subordinate clause are independent from each other such that tense in the non-restrictive relative clause is not interpreted in relation to that in the main clause but in relation to the moment of the utterance just as in independent clauses (see Inoue 1976, Nakau 1976, Teramura 1984, Sunakawa 1986, Nakamura 1994, cited in Yuasa 2005b: 535). Therefore, the range of possible tenses to appear in the relative clause is wide\textsuperscript{47}. This is illustrated in (77) below.

(77) Mary, who has/had/has had/will have two young children, has a part-time job in the library.

(73-77) above illustrate the mixed properties of non-restrictive relative clauses. On the one hand, they seem to be syntactically subordinate and share syntactic properties with default subordinate clauses. On the other hand, they seem to be semantically coordinate and share semantic properties with other independent clauses such as tense interpretation. The way in which a theory of language chooses to represent these instances depends on the architectural tenets of the theory. If the various levels of representation are not derived but independent,

\textsuperscript{47} Note that a restrictive relative clause can also show a tense that is independent to the main clause to which it is subordinated (e.g. “The woman who will have two young children has a part-time job”), which counter argues the claim that non-restrictive relative clauses show a different behavior to restrictive ones (Hengeveld, p.c.).
then the transparency of correspondence rules may be violated and cases such as non-restrictive relative clauses may be explained by means of a representational syntax-semantics mismatch. Of course, this goes against the default, isomorphic correspondence between levels enunciated in the Generalized Interface Principle according to which the representation of functional and formal features need to be as close as possible (Sadock & Schiller 1993: 393). If, on the other hand, a theory of language possesses derived levels of representation that mirror one another, tensions that are otherwise captured by means of two distinct autonomous systems cannot be captured if there is only one autonomous system (Yuasa & Sadock 2002). In theories of language of the derivational type, instances of pseudo-subordination such as non-restrictive relative clauses will have to be accounted for otherwise—building the semantic symmetry into syntax also so as to maintain transparency, accounting for semantic symmetry outside the grammar, or denying the semantic symmetry altogether.

### 5.3.3.2 TGG AND PSEUDO-SUBORDINATION

Mainstream Generative Grammar offers various accounts of relative clauses, some of which reflect, at the syntactic level of representation, the semantic difference between restrictive relative clauses (syntactically and semantically subordinate) and non-restrictive relative clauses (syntactically subordinate and, possibly, semantically independent). However, the question remains whether non-restrictive relative clauses are represented as semantically independent at a semantic level of representation such as LF. Figure 87 below offers a representation of (78) from Mankell (2009: 10, also in (71)).

(78) This had improved the old man’s moods, which were sometimes unbearable.
The analysis in Figure 87 following Demirdache (1991, cited in Bianchi 2002) for nonrestrictive relative clauses that are attached to DPs advocates that relative clauses are CPs that are adjoined to the right of the whole DP, which behaves as an antecedent. Accordingly, the CP “which were sometimes unbearable” adjoins to the DP “the old man’s moods” and forms a new DP “the old man’s moods, which were sometimes unbearable” (cf. restrictive relative clauses, which Demirdache represents such that the CP adjoins to the right of the NP instead of to the right of the DP – thus adjunction taking place in a hierarchically lower position for restrictive relative clauses than for non-restrictive relative clauses). Note that this provides a one-to-one mapping in that in non-restrictive clauses the DP and the relative CP make up a new DP and are co-referent whereas in restrictive clauses the NP and the relative CP make up a new NP that is interpreted intersectively (see ibid: 3). Now, as for non-restrictive clauses such as the one represented in Figure 87 below, it still adjoins the DP “the old man’s moods” such that it remains syntactically subordinate. The fact that the relative clause represented by the CP is an adjunct of the DP reflects the fact that the DP is complete before adjunction of the non-restrictive clause takes place, which reflects the non-defining nature of the adjoined clause (cf. the non-completeness of the NP to which restrictive clauses are adjoined). There is however no LF movement that reflects the semantic independence of the relative clause from the nominal phrase to form a new independent clause as those shown in (79) below, which are possible semantic paraphrases of (78).

(79) a. The old man’s moods were sometimes unbearable and this had improved the old man’s moods.

b. This had improved the old man’s moods. The old man’s moods were sometimes unbearable.
Figure 88 offers an alternative account of (80) following Kayne (1994) (see ibid, Law 2000: 194).

(80) This had improved the old man’s moods, which were sometimes unbearable. ((=79))

Note that in this analysis the determiner takes the CP as its complement and the NP is generated in the relative clause and then rises to Spec C. In non-restrictive relative clauses, there is further LF movement of the IP to Spec D so that the relative clause is not \(\epsilon\)-commanded by D. The CP relative clause “which were sometimes unbearable” is the complement of D “the”. The NP “old man’s moods” is not generated in the main clause but in the relative clause “which [old man’s moods] were sometimes unbearable” and then moves out of the relative clause to Spec C leaving a trace \(t_1\). Since the relative clause “which were sometimes unbearable” is non-restrictive, there is further movement at LF of the IP “were sometimes unbearable” to Spec D leaving a trace behind \(t_2\). Note that in this case the relative clause is syntactically subordinate (it is born as a complement to the determiner in the main clause) and acquires a higher position at LF at Spec D. However, it remains subordinate at this syntactic-semantic level of representation.
Figure 87. TGG and pseudo-subordination: the adjunct approach
Figure 88. TGG and pseudo-subordination: LF movement
Pseudo-subordination in the case of non-restrictive relative clauses is therefore not accounted for by a mismatch between the syntactic and semantic levels, since the semantic counterpart of the relative clause is (although higher at LF than at overt syntax) also subordinate to the nominal phrase or some part thereof, thus subordinate to the main clause.

5.3.3.3 PA AND PSEUDO-SUBORDINATION

The Parallel Architecture shares with other models of grammar of the autonomous type “the essential independence of a fairly superficial level of syntactic representation and a level of conceptual organization” (Yuasa & Sadock 2002: 89). This means that the PA can account for mixed cases of symmetry and asymmetry by means of a representational mismatch between that fairly superficial level of syntactic representation SS (syntactic structure) and the level of conceptual organization CS (conceptual structure) such that a “dirty” mapping obtains (see Jackendoff 2010a: 114). Figures 89-91 below offer possible representations of the phonological, syntactic and conceptual structures of (81) that illustrate the presence of such a mismatch in the case of non-restrictive relative clauses.

(81) This had improved the old man’s moods, which were sometimes unbearable. (=80))

As illustrated in Figure 89, the phonological structure of (81) presents two distinct Phonological Phrases48 Phon Ph\textsubscript{15} and Phon Ph\textsubscript{20} for the main clause “this had improved the old man’s moods” and the non-restrictive relative clause “which were sometimes unbearable” respectively. Note that the separation of phonological phrases is graphically marked by the comma that appears between the main and the relative clause. As can be

48 Phonological Phrases in PA correspond to Intonational Phrases in Nespor & Vogel (1986).
seen in Figures 90 and 91, the phonological structure aligns with the semantic rather than with the syntactic structure such that both the phonological and the conceptual structures show symmetry between the main and the relative clause whereas the syntactic structure shows asymmetry. The syntactic asymmetry between the main and the non-restrictive relative clause is shown in Figure 90 below.

Figure 89. PA and pseudo-subordination: phonological structure
Figure 90. PA and pseudo-subordination: syntactic structure

Figure 90 above illustrates that the syntactic structure of non-restrictive structures shows a relation of dependency between the main clause $S_{21}$ and the main clause $S_{20}$. There is no clause “this had improved the old man’s moods” that would correspond to the phonological phrase $\text{Phon Ph}_{15}$ but rather a $S_{21}$ that corresponds to the whole utterance $S_{21}$ “this had improved the old man’s moods, which were sometimes unbearable” that contains the $S_{20}$ corresponding to the phonological phrase $\text{Phon Ph}_{20}$ “which were sometimes unbearable”. The relation between the main and the relative clause is therefore one of asymmetry at SS such that the relative clause $S_{20}$ “which were sometimes unbearable” makes up the nominal phrase $NP_{14}$ “the old man’s
moods, which were sometimes unbearable” altogether with the determiner Det₆, “the” the noun phrase NP₇,8,9,10 “old man’s” and the NP₁₃ “moods”⁴⁹.

Contrarily to this asymmetric syntactic relation between the main and the relative clause, Figure 91 below illustrates that the CS offers a symmetric relation. It shows two possible accounts for the non-restrictive clause “which were sometimes unbearable” in “This had improved the old man’s moods, which were sometimes unbearable” in (81) above. In the first representation, the non-restrictive relative clause State₂₀ for “this had improved the old man’s moods” and the main clause Process₁₃ for “which were sometimes unbearable” appear as two independent units (see Yuasa 2005b). In the second representation, the non-restrictive clause and the main clause are coordinated such that AND appears between the Process₁₃ and the State₂₀. To the extent that the coordinate structures of the main and the non-restrictive relative clause are semantically independent regardless of whether they undergo coordination or not, the symmetry relation between main and relative clause at the CS remains unaffected. The fact that the main and the relative clause are semantically independent is clear by the fact that they both are both set in time PAST independently of each other. However, the content of the relative clause is still partly dependent on that of the main clause, which is why binding is implicated in the representation of the latter. The State described by the relative clause contains the primitive γ that is bound to the noun “moods” in the main clause (see Culicover & Jackendoff 2005, cf. Jackendoff 2010a: 12 for a restrictive relative clause). Note that the CS does not align with the SS but with the phonological structure in that it provides two independent nodes for process and state just as phonology provides with two independent phonological phrases for the

main and the non-restrictive relative clause respectively. Again, that the PA makes use of a mismatch phonology/semantics-syntax is a direct consequence of the main architectural tenets of the theory. Because the phonological, syntactic and conceptual structures are independent, the default transparency that normally applies between the various levels of representation can be violated such that mismatches occur in order to mirror instances of mixed symmetric and asymmetric properties such as is the case of non-restrictive relative clauses.

**Figure 91. PA and pseudo-subordination: conceptual structure**

### Conceptual structure (independent non-restrictive relative clause approach)

\[
\text{[Property \ SING \ (x); \ PROX, \ (\text{the past perfect})]; \ [time \ SOME\times\times\times]}\]

### Conceptual structure (independent, coordinate non-restrictive relative clause approach)

\[
\text{[Property \ SING \ (x); \ PROX, \ (the past perfect)]; \ [time \ SOME\times\times\times]}\]

---

50 This type of relative does however not always form an intonational phrase on its own.
51 Note that I have introduced PAST twice in order to represent the semantics of the past perfect (the past of the past). Note also that some items can always be further decomposed (better, unbearable).
5.3.3.4 **FDG AND PSEUDO-SUBORDINATION**

In Functional Discourse Grammar, non-restrictive relative clauses are represented by means of a pragmatics/phonology-semantics/morphosyntax mismatch rather than by a formulation (pragmatics/semantics)-encoding (morphosyntax/phonology) mismatch. This is illustrated in Figure 92 below, which offers a representation of (82).

(82) This had improved the old man’s moods, which were sometimes unbearable. ((=81)

**Figure 92. FDG and pseudo-subordination**

As illustrated in Figure 92, the Interpersonal Level of (82) is represented by means of two distinct discourse acts that are related asymmetrically -A₁ and A₁ for “this had improved the old man’s moods” and “which were sometimes unbearable” respectively. That there are two distinct discourse acts means that the illocutionary force of the host clause and that of the relative clause can vary –although in this case they are both declarative (DECL). Note that A₁ for the main clause is the nuclear discourse act whereas A₁ for the non-restrictive relative
clause is the subsidiary discourse act, which is represented by giving the relative clause the function “Aside” – the relative clause gives background information on the head noun introduced in the main clause (Hengeveld & Mackenzie 2008: 58). Each of the discourse acts is translated into a different intonational phrase with its independent intonation contour at the Phonological Level (differing from restrictive relative clauses, which do not form a separate intonation phrase, *ibid* 285). This is so, since the Phonological Level treats the two discourse acts as an instruction to give each segment a different intonational contour (*ibid* 284), in this case a non-final intonational contour for IP$_i$ and a final intonational contour for IP$_j$. The interface pragmatics-phonology is thus transparent.

Regarding the Representational Level, the relation between the main and the host clause is not one of equipollence as is the case of the Phonological Level but one of dependence as is the case of the Interpersonal Level. This is so, since the content of the relative clause depends upon that of the main clause (Dik 1997b: 43, cited in Hengeveld & Mackenzie 2008: 58). In this case, the head noun “moods” is represented by the variable $x_j$ and “which were sometimes unbearable” as a modifier of the latter. Note that the entities evoked by $R_K$ and $RL_f$ for “moods” and “which” at the Interpersonal Level all correspond to $x_j$ at the Representational Level - they are co-indexed in order to express allusion to the same individual (see Hengeveld & Mackenzie: 284). Note also that the modifier consists of a whole episode $ep_j$ situated in the past instead of a SoA $e$, since absolute tense marking in the relative clause is independent from that in the main clause. It is precisely the absolute tense marking of the relative clause that triggers the formation of the presence of the finite clause “which were sometimes unbearable”, of the finite verb phrase “were” and of the relative pronoun “which” at the Morphosyntactic Level (see *ibid*: 244). The formation and position of the non-restrictive relative clause (e.g. the attachment of the relative clause to the relative pronoun) is brought about by the special relation of
dependence (at the RL, between the head noun and the modifier) and that of co-reference (at the IL, between the entities evoked by R_K and R_L, expressed at the RL by co-indexation of x_j) (see *ibid* 50) and takes place by integrating the two discourse acts A_i and A_j into a main clause Cl_i and a dependent clause Cl_j that modifies the noun phrase Np_i belonging to the main clause.

To sum up, FDG accounts for cases of pseudo-subordination as that presented by non-restrictive relative clauses by means of a representational mismatch. The asymmetry relation is mainly expressed at the RL and ML by subordinating the host to the main clause, while the relation of symmetry is mainly expressed at the IL and at the PL, by introducing two distinct discourse acts and two distinct intonational phrases (although only the host clause has final intonation) respectively. Note that the IL also shows the asymmetric relation by introducing the function “aside” for the host clause and, at the same time, the RL shows the symmetry by providing both the host and the relative clause with an independent episode that carries independent, absolute tense marking. The fact that FDG accounts for cases of mixed symmetry and asymmetry by means of a mismatch among its levels of representation (and formulation levels are, although primarily symmetric or asymmetric, a mixed account of both) is a consequence of the main architectural tenets of the theory. Since each of the levels possesses distinct information and is relatively independent from the rest, one-to-one correspondences among them can be violated such that mismatches occur. These mismatches, in turn, are not at the cost of ultimate transparency, but express themselves the very mixed nature of constructions such as non-restrictive relative clauses.

### 5.3.4 CONCLUSIONS

Pseudo-coordination and pseudo-subordination are phenomena that go against the biggest principle of the syntax-semantics
interface, namely the tendency for a correspondence between syntax and semantics (Yuasa & Sadock 2002: 107). Pseudo-coordination refers to those instances in which a syntactically coordinate structure seems to share the semantic properties of a typical subordinate structure. This is the case of “hidden conditionals” such as “One more beer and I’m leaving” (see Culicover 1970, 1972, Culicover & Jackendoff 1997) that can be paraphrased as a subordinate, conditional structure. Pseudo-subordination, on the other hand, refers to those cases in which a syntactically subordinate structure seems to share the semantic properties of a typical coordinate structure (see Yuasa & Sadock 2002, Yuasa 2004, 2005b). Such is the case of subordinate, non-restrictive relative clauses that can be paraphrased as a coordinate structure. Since these provide cases of mixed properties of symmetry (relation of independence between clauses) and asymmetry (dependency relation between clauses) depending on whether one looks at the form or at the meaning side, a theory of language can opt for giving priority to one level of representation such that the other(s) mimic that one level. If the syntactic level of representation is given descriptive priority as it happens in mainstream Generative Grammar, then pseudo-coordinate structures, which are syntactically coordinate, will show coordinate properties all throughout the board while pseudo-subordinate structures, which are syntactically subordinate, will show a relation of dependency between clauses at all levels of representation. If the semantic level of representation is given descriptive priority, the opposite case scenario will arise. In such approaches, the interface remains transparent because mismatches are avoided in the explanation of instances of mixed properties as those presented by hidden conditionals and non-restrictive relative clauses. On the other hand, if the theory of language at hand is multi-modular and shows no descriptive priority of one level of representation over the other(s) as is the case of the Parallel Architecture and (to a lesser extent) Functional Discourse Grammar, “the syntactic and semantic representations do not need to be isomorphic all the
time, and there can be mismatch cases where incongruous representations at different levels of grammar are associated” (Yuasa 2005b: 539). For theories of the autonomous type, therefore, the mixed properties of pseudo-coordination and pseudo-subordination can be accounted for by means of a mismatch between the functional and the formal levels of representation.

5.4 INTERJECTIONS

5.4.1 INTRODUCTION

Interjections are elements that add a particular type of emotion to their surrounding linguistic discourse. These elements express “emotional or mental attitudes or states” (Wharton 2000: 176) and show a relation to their syntactic environment such that they appear to be “purely emotive words which do not enter into syntactic relations” (Quirk, Greenbaum et al. 1985: 853, cited in Wharton 2000: 175). Apart from being somewhat syntactically independent from their surrounding discourse, they appear to be independent regarding particular phonetic-phonological constraints (Pompino-Marschall 2004, cited in O’Connell, Kowal & Ageneau 2005). The idiosyncratic behavior of interjections makes them very often be ignored by most linguistic theories, be “denied their own identity and rather neglected in the literature” (Matamala 2007: 117, see also Ameka 1992). Although their relation to the surrounding discourse is idiosyncratic and therefore worth exploring, “little is known about the use of interjections in spoken discourse. Their very definition, the necessary criteria for inclusion under this part of speech, their privileges of occurrence, and their psychological functions for both speaker and listener in dialogue are all in need of extensive empirical research” (O’Connell, Kowal & Ageneau 2005: 154).
The bold type in (83) and (84) from Paul Auster’s *The Brooklyn Follies* (2011: 152, 203) below illustrates two types of interjections.

(83) “So you’ve read Kafka.”
   “Some. The novels and maybe a dozen stories. A long time ago now, back when I was your age. But the thing about Kafka is that he stays with you. Once you’ve dipped into his work, you don’t forget it.”
   “Have you looked at the diaries and letters? Have you read any biographies?”
   “You know me, Tom. I’m not a very serious person.”
   “A pity. The more you learn about his life, the more interesting his work becomes. Kafka wasn’t just a great writer, you see, he was a remarkable man as well. Did you ever hear the story about the doll?”
   “Not that I can remember.”
   “Ah. Then listen carefully. I offer it to you as the first piece of evidence in support of my case.”

(84) “I’m having second thoughts,” Trumbell said.
   “Yes,” Gordon added, jumping in before Harry had a chance to reply. “You see, Mr. Brightman, a sale like this can’t be taken lightly. Not when there’s so much money involved.”
   “I’m aware of that,” Harry said. “That’s why he had the first page examined by those experts. Not just one man, but two.”
   “Not two,” Trumbell said. “Three.”
   “Three?”
   “Three,” Gordon said. “You can never be too careful, can you? Myron also took it to a curator at the Morgan Library. One of the top men in the field. He gave his verdict this morning and he’s convinced it’s a forgery.”
   “Well,” Harry stammered, “two out of three isn’t bad. Why trust this man’s opinion over the two others?”

(83) and (84) offer an example of a primary and a secondary interjection. Note that the primary interjection in (83) is non-productive whereas the secondary interjection in (84) is an
otherwise productive word (that may undergo inflection and derivation) that is here used as a non-productive word and that loses its ordinary meaning (see Wharton 2000: 175-176). Primary interjections are thus non-productive words while secondary interjections are words that may be inflected or derived and used as non-interjections. Note also that, “[a]lthough apparently insignificant, these units add semanticopragmatic meaning to discourse” (Matamala 2007: 117). In (83), “ah” expresses a certain emotion, in this case surprise and the acknowledgement that the speaker has understood newly given information (hence “ah” can be paraphrased as “aha”). In (84), “well” loses the meaning of “positive” and rather expresses, again, the acknowledgement that new information has been properly understood. It furthermore functions as a discourse marker or linking word. Opposed to the view that interjections merely add meaning to their surrounding discourse, they can be seen as possessing the meaning of an independent speech act of performative nature (see Poggi 2009).

Interjections may be represented as semantic and/or pragmatic content that has a phonological counterpart but that arguably lacks a syntactic representation. The architectural tenets of a theory of language determine whether interjections are to be accounted for without or within the grammar and, if represented within the grammar, whether they are to be represented at all levels or not. If a model of grammar observes interface transparency, interjections will have to be accounted for at the semantic and subsequently also at the syntactic level, thus creating representational redundancy. Alternatively, the contribution of interjections can be attributed to pragmatics, thus outside the grammar proper, in which case the syntactic level does not have to mirror the semantic structure of the interjection site –since there is not one. If, on the other hand, the theory of language at hand does not observe interface transparency but, on the contrary, allows for inter-level mismatches due to a (n at least partly) lack of inter-level derivationality, then levels may
be mismatching and what is represented at the pragmatic and/or semantic level(s) for the interjection site does not necessarily have to be mirrored at the syntactic site. If it is, then it is not the consequence of an architectural constraint. Also, the architectural tenets of a grammatical model determine whether symmetry relations between an interjection and the following discourse are necessarily or, alternatively, optionally consistent between the various levels of representation. If interface transparency is favored, the model of grammar preferably shows symmetric or asymmetric relations between the interjection and its following discourse all throughout the board. Contrarily, if interface flexibility is favored, the model of language is allowed to exhibit a(n a)symmetric relation between the interjection and the following discourse at one level of representation but not at the remainder. In what follows, the idiosyncrasies of interjections will be introduced and an analysis of an interjection and its surrounding linguistic context will be suggested following the main tenets of TGG, PA and FDG. Special attention will be paid to the role that each theory’s architecture plays in choosing how to represent interjections and the relation existing between such tenets and representational redundancy or, alternatively, the presence of absent levels of representation.

5.4.2 TGG AND INTERJECTIONS

Interjections possess a unique syntactic and phonetic behavior in that they do not seem to fully integrate into the surrounding syntactic discourse and in that they escape certain phonetic constraints (Pompino-Marschall 2004). Interjections therefore constitute an utterance by themselves, and are only loosely integrated into the grammar of the clause containing them” … “[A]n interjection is capable of constituting an utterance by itself in a unique, non-elliptical manner” (Wharton 2000: 176). This gives raise to two possible analyses of interjections in traditional generative grammar. On the one hand, since
interjections are not syntactically integrated within their surroundings, they may be ignored by the syntactic component. This is illustrated in Figure 93 for (85) (extracted and adapted from (83) above from Auster’s *The Brooklyn Follies* 2011). Dotted rectangles illustrate the interjection site, when present.

(85) Ah, then listen carefully.

**Figure 93. TGG and interjections: they don’t belong to syntax**

Alternatively, the fact that interjections constitute an utterance by themselves can lead to an analysis of (86) below such as that in Figure 94. According to this analysis, “ah” belongs within the syntactic component but constitutes an independent interjection phrase IntP that may optionally be the daughter of a higher node CP for the sake of uniformity.

(86) Ah, then listen carefully.  

((=85))
Finally, Greenberg (1984) proposes an analysis such that the interjection (INT) appears to the right of potential left-dislocated constituents (LDC) and as a daughter of $S'$ (here $C'$) to the left of $S$ (here $C$). An adapted analysis following this line of thought is suggested in Figure 95 for (86) above. The suggested order of constituents follows from the fact that, in a sentence containing a LDC and an interjection, the order appears to be LDC+interjection+CP. This is illustrated in (87a) below (cf. (87b)).

(87)  

a. \[\text{You, man, then listen carefully.} \quad \text{LDC+IntP+CP}\]

b. \[\text{*Man, you, then listen carefully.} \quad \text{IntP+LDC+CP}\]

\[52\] “Man” is not analyzed as a vocative since its primary function does not seem to be to call the addressee. It is not analyzed as a modifier of “you” since it does not seem to specify any particular property of the addressee either.
To sum up, there exist at least three options. First, interjections are ignored by the syntactic component, thus not represented within the grammar proper. If interface transparency is to be maintained, then interjections should have no corresponding semantic structure. A solution then is to account for the contribution of interjections as something of pragmatic nature and consider such pragmatic effects as not belonging within the grammar proper. Secondly, interjections can be seen as belonging within the syntactic component. In this case, and in order to maintain interface transparency, the contribution of interjections should be represented within the semantic component as well. This case scenario offers two further options. On the one hand, the syntax of the interjection can be seen as being independent to that of the following utterance such that it constitutes an utterance in itself and the relation that is established between the interjection and the following utterance is symmetric. In this case, in order to maintain transparency,
interjections should be seen as contributing to semantics at a hierarchically symmetric node such as that of the following utterance. On the other hand, the syntax of the interjection can be seen as being dependent to that of the following utterance such that it does not constitute an utterance in itself and the relation that is established between the interjection and the following utterance is one of asymmetry at the syntactic level. In this case, interjections should be seen as contributing to semantics at a lower level than that of the following utterance at the semantic level as well.

5.4.3 PA AND INTERJECTIONS

The Parallel Architecture possesses no separate pragmatic component. Inferences and other pragmatic features may be included within the conceptual component such that the meaning of interjections would be most likely to appear at the conceptual component and not outside of the grammar proper. Since the PA does not need to show inter-level transparency, interjections should not necessarily appear at the syntactic level. The fact that they appear at the syntactic level is not a consequence of the need for interface transparency or any such architectural constraint. Finally, interjections appear at the phonological level as separate utterances. Figures 96-98 below offer possible phonological, syntactic and conceptual structures for (88). Dotted squares indicate the interjection site.

(88) Ah, then listen carefully. ((=86))

Figure 96 below illustrates that /ə/ (“ah”) in (88) appears as a separate Utterance that together with Utterance 8 /ðenlisoncéfali/ forms Utterance 9 (see Culicover & Jackendoff 2005: 236 for non-sentential utterances). The phonological structure thus reflects the pause that appears between the interjection and the following discourse. Figure 97 offers a
possible syntactic structure for (88). Interjection_{1,2,3} is simply represented as an independent utterance \( U \) that together with the sentence \( S_8 \) forms the sentence \( S_9 \). Note that the interjection is not to be considered as a different sentence but as an utterance \( (U) \) due its idiosyncratic syntactic nature (see \textit{ibid} 237). Finally, Figure 98 offers a suggestion of what the conceptual structure of (88) “Ah, then listen carefully” could look like. Since “the richness of Conceptual Structure is justified not simply on the basis of the adequacy to support linguistic semantics, but also on its adequacy to support inference and on its adequacy to support the connection to nonlinguistic perception and action” (\textit{ibid}: 20). Figure 98 could thus include a conceptual structure for “ah” such that its pragmatic contribution to meaning can be accounted for at this level of representation. Note that the conceptual structure of the interjection “ah” is represented as the speaker’s present state of being surprised and is thus included in the Conceptual Structure (cf. Wierzbicka’s semantic metalanguage 1992). However, the desirability of giving the attitude expressed by an interjection a conceptual structure is questionable, just as it is to assign a conceptual structure to facial expressions or hand gestures (Culicover, p.c.).

**Figure 96. PA and interjections: phonological structure**

![Phonological structure diagram](image-url)
To sum up, the PA analyzes interjections at all levels of representation. They can be represented as a separate unit at the phonological level such that the pause existing between the interjection and the subsequent discourse is reflected. At the

53 Interjections should possibly not need to be represented in the syntax (Jackendoff, p.c.).
syntactic level, they appear as a separate unit that constitutes a separate utterance by themselves and joins another sentence. Since the PA allows for inter-level mismatches, the fact that interjections appear at the syntactic level does not mean that they need a semantic counterpart. However, interjections can also be argued to have a conceptual structure, since the PA conceives a conceptual level that consists of semantic as well as of pragmatic content.\textsuperscript{54}

5.4.4 FDG AND INTERJECTIONS

Functional Discourse Grammar possesses a pragmatic level that is separate to the semantic one, which means that the contribution of interjections can be represented at the pragmatic (interpersonal) level IL within the grammar proper. At the same time, and despite its strong top-down directionality, FDG allows for inter-level mismatches, which means that the semantic (representational) level RL does not necessarily need to have a semantic counterpart for the pragmatic site of the interjection. Nor is there an architectural need for a morphosyntactic counterpart at the morphosyntactic level ML. There exists a mismatch therefore between the interpersonal/phonological and the representational/morphosyntactic levels of representation, since interjections are sent directly from the Interpersonal Level down to the Phonological Level (Hengeveld & Mackenze 2008: 77). Figure 99 below offers a possible representation of (89). Dotted rectangles correspond to the interjection site, where present.

(89) Ah, then listen carefully. \((=88))\)

\textsuperscript{54} Note that the CS in PA argues for the inclusion of pragmatic information usually related to information structure. The representation of interjections at CS is therefore not a straightforward issue.
Figure 99. FDG and interjections

IL \( (M_1) \{ A : [(F_1; \text{ah}_\text{prot} (F_1)) (P_1) A] \{A\} \} \)

\( (A_1) : [(\text{emph } F_1; \text{IMP } (F_1)) (P_1) A (C_1) ; [(T_1) (T_2)] (C_1)] \{A\} \{M_1\} \)

RL \( (P_1; \text{ep}_1; \text{e}_1; [(f_1; [(x_1) \Lambda (f_1) (f_1)] (e_1)] (\text{ep}_1)) (P_1) \)

ML \( (\text{Le}; \{C\}; [(\text{Adp}) (Vp_1) (\text{Adp})] \{C\} \{\text{Le}\}) \)

PL \( (\text{Le}; \{[P; ([PP; /\text{an} / (P)] (P)]) (PP); (/\text{an} / (P))] \{P; [PP; /\text{an} / (P)] \}
\text{Le}) \{\text{Le}\} \)

As illustrated in Figure 99 above, the interjection “ah” occupies the head of the slot for Illocution at the Interpersonal Level. This coincides with Poggi’s claim that the meaning of interjections is that of whole speech acts that have a performative content (Poggi 2009) – though she claims that they have propositional, thus semantic, content as well. “Ah” is an “expressive” interjection with which the speaker reacts to the ongoing interaction - as opposed to “interactive” interjections e.g. “thanks, sorry, good morning”. “Ah” is considered to be an expressive, since it varies from language to language (cf. “ah” in English, “echt wahr” in German, etc). Note that, as opposed to interactive interjections, expressives only have one participant (in this case (P_1)A) – cf. (P_1)A for the IL of “then listen carefully” (see ibid 76-77 for an analysis of expressives and interactives). Note that FDG’s ability to incorporate the contribution of interjections within the grammar partly falls on the fact that the model possesses a pragmatic level of representation. While it can be claimed that interjections are either analyzed as linguistic elements and their contribution is semantic (e.g. Wilkins 1992, cited in Wharton 2000: 174) (thus
linguistic) or as a “ritualized act” (Goffman 1981: 100, cited in *ibid*) (thus non-linguistic), the inclusion of such pragmatic, ritualized acts within the grammar proper erases the distinction between the linguistic and the non-linguistic nature of interjections. The independence that is shown at the IL by positioning the interjection at an independent discourse act A₁ is reflected at the PL by representing the phonetic site of the interjection as an independent intonational phrase IPᵢ.

To sum up, Functional Discourse Grammar possesses a pragmatic level that is formally distinct from the semantic one such that it can account for the contribution of interjections within the grammar proper at the pragmatic level of representation. This information goes directly to the phonological level, such that neither the semantic or the morphosyntactic levels possess an interjection site. This mismatch is allowed by the main architectural tenets of the theory. Although the model is strongly top-down, the fact that its levels of representation are partly unique as to the information they offer means that there can be a representational mismatch in that the interjection only possesses an interpersonal and a phonological representation but no representational or morphosyntactic ones (these two levels are absent).

### 5.4.5 CONCLUSIONS

Interjections are elements that contribute to the overall intention or emotion of the linguistic context they appear in, though they seem to be considerably independent from the syntax and the phonology of its context. Because their contribution seems to be mainly pragmatic, a theory of language can choose to represent them at a pragmatic level of representation (or attribute their meaning to a non-formalized level of grammar that may or may not belong within the grammar) or, alternatively, represent their contribution at a formal, semantic level of representation. Also, a theory of language can choose to represent the syntax of
interjections within the grammar or, alternatively, a linguistic theory can argue that these do not belong within the syntactic level. Finally, interjections have to be represented at phonology, since they are obviously pronounced material. The choice of where to represent the contribution of interjections depends upon the architectural tenets of a theory of language. If the theory of language is of the derivational type and it represents interjections at the syntactic level, then these will have to be accounted for at the semantic level that derives from it too. If, on the other hand, the theory is one of the autonomous type, a mismatch will be allowed for in that interjections may be accounted for at pragmatics or semantics and at phonology, but not necessarily at syntax.

Accordingly, Generative Grammar, of the derivational type, shows two main tendencies. Interjections may simply be discarded in the grammatical framework and their contribution can be attributed to a non-grammatical, pragmatic component. Alternatively, interjections may be represented at syntax, in which case they can either appear as a separate node to that of the utterance whose emotive status they contribute to, or they can be integrated within it. In any of these two cases, and since it is a framework of the derivational type, the syntactic representation of the interjection needs to have a semantic counterpart.

Contrarily, the Parallel Architecture, of the autonomous type, represents interjections at the syntactic level of representation, as independent nodes of utterance status that join the sentence they pragmatically modify to make up a new sentence. Since the semantic and the syntactic levels are independent, the fact that interjections are represented at the syntactic level does not mean that they should appear at semantics too. However, since there is no formal pragmatic level, interjections could be represented at semantics as the state that the speaker finds him or herself in when the utterance takes place—although they could also be absent from the semantic level.
Finally, Functional Discourse Grammar, with independent levels of representation, formalizes interjections at the pragmatic level, information that goes straight down to the Phonological Level. The mismatch created given the presence of interpersonal and phonological information and the lack of corresponding representational and morphosyntactic information is allowed therefore by the architectural tenets of the theory.

5.5 **UNDERSTOOD ARGUMENTS**

5.5.1 **INTRODUCTION**

An understood argument is one that is not explicitly expressed but is however properly understood. Such arguments can be left out if they can be properly interpreted –if they can be recovered after omission (see Groefsema 1995). The bold type in (90) from Patricia Highsmith’s *Strangers on a Train* (1999: 202) illustrates an imperative clause that leaves out the agent argument\(^55\).

(90)  
‘What, Charley? What is it?’
‘I wanna lie down.’ He flopped down, but that wasn’t it. He motioned his mother away so he could get up, but when he sat up he wanted to lie down again, so he stood up. ‘Feel like I’m dying!’
‘Lie down, darling. How about some – some hot tea?’
Bruno tore off his smoking jacket, then his pyjama top. He was suffocating. He had to pant to breathe. He did feel like he was dying!
She hurried to him with a wet towel. ‘What is it, your stomach?’
‘Everything.’ He kicked off his slippers. He went to the window to open it, but it was already open. He

\(^{55}\text{Note that the benefactor can also be argued to be an understood object (You get me a doctor) and, in fact, the imperative which follows - “get me a drink”- has an overt benefactor.}\)
turned, sweating, ‘Ma, maybe I’m dying. You think I’m dying?’ ‘I’ll get you a drink!’
‘No, **get the doctor**!’ he shrieked. ‘Get me a drink, too!’

The bold type in (90) above illustrates an imperative clause. As in any regular imperative clause, the subject can be thought to have been left implicit (see Schmerling 1982). (91) below offers the subject-explicit counterpart to the bold type in (90). Since “you”, explicit in (91), is also understood in (90), we assume that “you” is also an argument of “get” in (90) that is implicitly understood, i.e. an understood argument. The argument that is omitted in (90) is made explicit in (91) and appears in bold type.

(91) **You** get the doctor!

Note that the argument “you” in (91) could be omitted because it could be retrieved from the extra-linguistic context, i.e. the surrounding environment of the conversation. An argument can also be omitted on some occasions if it appears in the linguistic context. This is illustrated in (92) below from Patricia Highsmith’s *Strangers on a Train* (1999: 202-203). Note that in the clause “couldn’t move his tongue” the agent argument can be recalled from the previous linguistic discourse, the antecedent “he” in “he gasped” and in “he couldn’t talk”. Arguments that can be retrieved from the linguistic or extra-linguistic context are called Definite Null Complements (Fillmore 1986, see also García Velasco & Portero Muñoz 2002).

(92) ‘Dr Packer? This is Mrs Bruno. Could you recommend a doctor in the neighbourhood?’

Bruno screamed. How would a doctor get out here in the Connecticut sticks? ‘Massom’ – **He gasped. He couldn’t talk, couldn’t move his tongue.** It had gone into his vocal cords! ‘Aaaaaagh!’ He wriggled from under the smoking jacket his mother was trying to throw over him. Let Herbert stand there gaping at him if he wanted to!
Finally, an argument that is not recoverable from the linguistic or extra-linguistic context is called an Indefinite Null Complement (see Fillmore 1986). In this approach, such understood arguments are normally omitted for lexical and not for contextual reasons. (93) below from Highsmith (1999: 207) illustrates an instance in which the experiencer of the verb “to feel” can be said to be understood. Note that there are three possible approaches for such verbs: to posit that there are two lexemes for “feel”, one with an omissible external argument as that in (93) (“Bruno felt odd”) and one with a non-omissible external argument (e.g. “Bruno felt pain”); to postulate that there are two lexemes for “feel”, one without any kind of external argument (“Bruno felt odd”, no argument is omitted) and one with one external argument (e.g. “Bruno felt pain”); to believe that there is one lexeme for “feel” that has one external argument (the feeling) that can be optionally be left implicit or be explicitly expressed.

\[(93)\]

> ‘You know about his wife’s murder, of course.’
> ‘Sure, I read about it. Then I read about him building the Palmyra Club.’
> ‘And you thought, how interesting, because you had found a book six months before that belonged to him.’
> Bruno hesitated. ‘Yeah.’
> Gerard grunted, and looked down with a little smile of disgust. Bruno felt odd, uncomfortable. When had he seen it before, a smile like that after a grunt? Once when he had lied to his father about something, very obviously lied and clung to it, and his father’s grunt, the disbelief in the smile, had shamed him. Bruno realized that his eyes paled with Gerard to forgive him, so he deliberately looked off at the window.

In what follows, the understood argument of the subject of imperative clauses is analyzed according to TGG, PA and FDG in an attempt to relate the analysis to each theory’s architecture and this, in turn, to the need for representational redundancy and theory-internal empty devices.
5.5.2 TGG AND IMPERATIVES

In TGG, a distinction can be made between understood arguments that have been topic-dropped, pro-dropped or those that are the subject of an imperative. Topic drop consists of the omission of a constituent that is positioned in the topic (sentence initial) slot of a finite clause (see Ross 1982, Huang 1984, Fries 1988, Rizzi 1994, cited in Trutkowski 2012). Trutkowski offers an example of topic drop in German from an interview in the newspapers the Spiegel (13.10.2008) in (94) below. In (94), “Zertifikate” seems to be omitted in the answer by the interviewee Horst Köhler where the gap “_” appears. It is postulated that the gap occupies the “_” position due to the position of the verb (V2) which, being in the overt initial position, must therefore be preceded by some covert element that occupies the initial covert position, thus creating the inversion.

(94) SPIEGEL: Herr Bundespräsident, besitzen Sie Zertifikate?
    [SPIEGEL]: Mister Federal President, own you certificates-ACC?
    Horst Köhler: Nein, _ habe ich nie gezielt gekauft.
    Horst Köhler: No, [–ACC] have I never purposely bought

Secondly, an argument can be said to have been pro-dropped if it is the subject of a finite clause and is not expressed. The omission of such arguments is normally believed to be language dependent such that languages can either be pro-drop (if they allow for the dropping of the explicit, lexical subject) or non pro-drop (if they do not) (Chomsky 1981). In the generative framework, the pro-drop possibility by a given language is assumed to be the consequence of the activation of the pro-drop parameter (a language can either activate that parameter, in which case it is pro-drop, or not do so, in which case it is not). It is normally assumed that there exists a relation between a
language’s richness in verbal morphology and the pro-drop parameter such that a language with rich verbal morphology can drop the subject and a language with poor verbal morphology cannot. Accordingly, a language with rich verbal morphology such as Italian in (95) would drop the subject in a finite clause and a language with poor verbal morphology such as English in (95) would not (see Ackema et al 2006).

(95) Lo sò; lo sai; lo sà; lo sappiamo; lo sapete; lo sanno.
I know it; you know it; he/she/it knows it; we know it; you know it; they know it.

Some languages with poor morphology that drop the subject of finite clauses seem to contradict these generalizations (see Huang 1984, 1989 for Chinese). In the generative framework, the verb carries so-called “uninterpretable features” or “phi-features” for number, person and gender that need to be deleted under identity with the same features in the subject. If the subject is lexical (in a non pro-drop language with poor morphology), the uninterpretable features of the verb are deleted under identity with the same features possessed by the lexical subject. If the subject is not lexical (in a pro-drop language with rich morphology), pro is said to receive a set of features that agree with those present in the verb, thus allowing for the deletion of the verb’s uninterpretable features. In languages such as Chinese (a pro-drop language with poor morphology), the verb is said to have no phi-features, thus these do not need to be deleted under identity with those in any type of subject or empty category (see Beniis 2006:16-17).

A different approach to subject dropping is that proposed by Ackema (2002), according to whom only overt DPs can function as the subject of a sentence since otherwise it is inflection that functions as the subject. Since the presence of an overt subject is mandatory in non pro-drop languages but optional in pro-drop languages, its function is different. In non pro-drop languages, it specifies the inflectional affix. In pro-
drop languages, it appears as a left-dislocated topic that doubles the agreement affix which could function as subject on its own \textit{(ibid: 299-300)}.

As for imperatives, these can be analyzed as an instance of pro-drop in non-finite clauses, the missing argument can be aligned with those in control structures in finite clauses, or it can be accounted for as an instance of PF deletion. Generative Grammar offers various accounts of the subject of imperatives, although they all share the presence of a syntactic category for the subject argument. Figure 100 below offers an account such that the subject of (96) below (from (90)) is accounted for as a regular instance of ellipsis (see sluicing in GG in section 5.2). The second person subject argument is represented at core syntax such that it can be read by the Logical Form. It is however deleted at Phonetic Form and thus goes unpronounced.

(96) Get the doctor!

\textbf{Figure 100. TGG and the subject of imperatives: PF deletion}

A different account for the understood argument that functions as the subject of imperative clauses in GG is provided in Figure 101 below. Here, the subject of (97) is represented as the empty category pro.
Note that the subject argument of (97) above is here identified with the category pro. This subject is the same as the one appearing in pro-drop languages, the weak version of the strong, lexical subject: “the non-lexical subject in imperatives is necessarily interpreted as the addressee. It thus seems to be most efficient to relate the interpretation of the subject to the non-lexical subject position. Moreover, the non-lexical subject can generally be replaced by a lexical pronominal subject [...] without substantial differences in interpretation. We thus may assume the non-lexical subject to be the weak variant of the lexical subject” (Bennis 2007: 122).

Figure 101. TGG and the subject of imperatives: pro

Note that Bennis (2006) believes that pro is available in specific constructions rather than in specific languages (cf. Chomsky 1981). In order to illustrate the view that pro is construction-dependent, he uses the example of imperatives in

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56 Note that Bennis discusses the appearance of the imperative verb under CP and the fact that CP may rather be called ImpP (Imperative Phrase).
Dutch. In Dutch, the subject may be dropped in regular imperatives (addressee second person singular), though it cannot be dropped in imperatives whose addressee is the second person (polite) singular or imperatives whose addressee is the second person plural. This is illustrated in (98) below (b-d from Bennis 2006:4). Since Dutch is a language that is otherwise considered to be non pro-drop and the unmarked second person singular imperative construction allows for the subject to be dropped, the pro-drop parameter is said to be construction-specific. Bennis thus advocates for a regular imperative construction (98a) that has a +pro-drop feature and for an imperative construction whose addressee is second person singular (polite) (98b) or second person plural (98c) with a –pro-drop feature. Just as in pro-drop languages, the subject can be an explicit DP for emphasis purposes in the otherwise +pro-drop unmarked second person singular imperative (98d). Since in (98d) and similar cases only the emphatic pronoun jij and not the regular pronoun je can appear, pro is taken to be the weak counterpart of jij, the lexical subject of emphatic imperatives (see Bennis 2006: 5-6).

(98) a. Ga maar weg!
go (you[–plu]) PRT away
   b. Gaat U maar weg!
go you[+polite] PRT away
   c. Gaan jullie maar weg!
go you[+plu] PRT away
   d. Ga jij maar weg!
go you[–plu] PRT away

A further account of the subject of imperative clauses in TGG is provided in Figure 102 below. Here, the subject of (99) is represented as the empty category PRO. Note that, whereas pro aligns imperative clauses with subjunctive clauses (both
with a possible overt subject), PRO aligns them with infinitival clauses (both without a possible overt subject) (see Han 2000, cited in Van der Wurff 2007: 35).

(99) Get the doctor!  

Figure 102. TGG and the subject of imperatives: PRO

To sum up, Generative Grammar offers several accounts of the subject position in imperative clauses. Among them, one account explains the subject of imperative clauses as an elided argument that is deleted in Phonetic form. A different account represents the subject of imperative clauses as an empty category that can be either pro (as the subject of inflected clauses with no overt subject in pro-drop languages) or PRO (as the subject of embedded clauses in control structures). Any of these options assumes that there is a syntactic counterpart to the semantic, understood argument whose grammatical function is that of subject of the imperative clause. This allows for a transparent mapping from the syntactic to the semantic component via Logical Form at the cost of introducing a deletion mechanism or, alternatively, an empty syntactic category.
5.5.3 PA AND IMPERATIVES

The Parallel Architecture does not necessarily have to account for the covert subject of imperative clauses in syntax, since the syntax-semantics mapping does not need to be transparent. This means that the subject argument can be represented in semantics, but not necessarily in syntax. There exists therefore a mismatch between the various levels of representation in the PA representation of (100) below, since the subject is only present at the semantic level –see the dotted rectangle. This is illustrated in Figures 103-105 below that offer possible phonological, syntactic and conceptual structures for (100).

(100) Get the doctor!  \((=\text{99})\)

Figure 103. PA and the subject of imperatives: phonological structure
Note that Figures 103 and 104 for the phonological and syntactic structures do not include the subject of the imperative clause in (100) above. The conceptual structure suggested in Figure 105, however, includes the understood argument corresponding to the subject of the imperative clause. Although the addressee is thus represented in the Conceptual Structure in Figure 97 as [Person YOU], it could be represented as PRO (the collection of semantic features that may map into a pronoun corresponding to the highest-ranked semantic argument that refers to either the speaker or the addressee or to anaphors) (see Culicover & Jackendoff 2005: 195). In cases like this, the grammatical function tier (GFT) that corresponds to the
grammatical functions of NP arguments (see Figure 106 below) helps determine agreement between the subject and the verb and prevents any other argument from becoming the subject (e.g. the patient “the doctor” in (100)). In Figure 106, GF₀ corresponds to the highest ranked NP, thus to the subject, and GF₄ corresponds to the second highest ranked NP, “the doctor”. Not all arguments need to be present at syntax – the subject argument is indeed not present at the Syntactic Structure. Note that the grammatical function is here linked to the conceptual structure, though not to the syntactic structure – the subject (GF₀) is ‘CS-linked’ to [PersonYOU₀] in the Conceptual Structure (see ibid: 191, 195).

Figure 106. PA and the subject of imperatives: grammatical function tier

To sum up, the PA does not need a one-to-one inter-level mapping. This means that the covert subject of imperatives need not be expressed at syntax as well as at semantics so as to maintain interface transparency. The subject of imperative clauses can thus be represented at the Conceptual Structure, though it does not need to be represented at the phonological or the syntactic structures. This avoids the use of an empty syntactic category to counterpart the semantics of the subject of imperative clauses. In the lack of a syntactic counterpart to the understood argument for the covert subject, the grammatical function tier helps determine verbal agreement with the subject and the proper distribution of grammatical functions such that no other, overt nominal phrase takes up the role of subject in the lack of an overt one.
5.5.4 FDG AND IMPERATIVES

In Functional Discourse Grammar, an understood argument or zero-realized (implicit) item is represented by means of a variable that is co-indexed with its antecedent (either in the preceding linguistic discourse or in the extra-linguistic discourse) at the Representational Level. The head of an understood argument is absent such that the variable accounts for the designation of the variable on its own (Hengeveld & Mackenzie 2008: 143, 237). Figure 107 below offers a representation of (101). The dotted rectangle indicates the subject site at the semantic level of representation.

(101) Get the doctor! **(=100)**

**Figure 107. FDG and the subject of imperatives**

\[ \text{IL: } \{M; \{A; \{[F; \{IMP \{F;\}} \{P;\}} \{P;\}} \{C; \{[T; \{R;\}} \{C;\}} \}} \{A;\}} \{M;\}} \}

\[ \text{RL: } \{e; \{[f; \{[x; \{x\}} \}} \{f;\}} \{f;\}} \{e;\}} \}

\[ \text{ML: } \{e; \{C; \{[Vp; \{Np;\}} \}} \{C;\}} \{C;\}} \{e;\}} \}

\[ \text{PL: } \{u; \{r; \{[rp; \{get\text{\_}ad\text{\_}ta/\{rp;\}} \}} \{r;\}} \{u;\}} \}

Note that the understood argument for the subject of (101) above is only represented at the Representational Level\(^{57}\) by means of the non-instantiated variable \((x_i)\) for the absent head that is to be co-indexed with the relevant referent at the Contextual Component. If the addressee has appeared in the previous linguistic discourse, then the variables that represent the addressee in the formalization of the RL of those antecedent utterances are also to be co-indexed with \(x_i\) from Figure 107.

\(^{57}\) The imperative illocution makes the Communicated Content map into the SoA \(e_i\). Since there is no real information exchange, there is no propositional layer at the RL (Hengeveld & Mackenzie 2008: 279).
The variable \( x_i \) is represented at the Representational Level because its referent is recoverable from the immediate context. However, it is not substituted by a more complex structure or instantiated, nor does it have a corresponding act of reference at the Interpersonal Level as the actor is not expressed (ibid: 279).

An alternative to this account is that proposed by Connolly (2007a: 27-28, 2007b: 199-202) such that, instead of representing omitted arguments at the Representational Level, these could be included in the description of the content component\(^{58} \) outside of the grammar proper so as to not overload the semantic level while maintaining all of the expression’s meaning. Connolly (2007a: 27, 28) represents “the boy washed” in (102) and “The boy washed himself” in (103) respectively (Connolly 2007a: 27, 28). The understood argument “himself” is absent at RL in “the boy washed” in (102), whereas it is present at RL in “the boy washed himself” in (103) (in bold type, no emphasis in the original). The mental, content component would nonetheless account for (102) and (103) in the same way—a variable for the Patient would be shared in both representations of the content component. Note that in (102) “himself” is not represented in the semantic structure, although the argument status of this element is supposedly compulsory. The meaning of the argument can be then directly retrieved from the content component without having to represent it in the grammar proper.

(102) The boy washed.
\[ (\text{ep}:[(\text{p}:[(\text{past} e:[(f_i:\text{wash}_v(f_i))(1x_i:\text{boy}_N(x_i))\text{Ag}]
(e_i))])(\text{p}_i)](\text{ep}_i)) \]

(103) The boy washed \textit{himself}.
\[ (\text{ep}:[(\text{p}:[(\text{past} e:[(f_i:\text{wash}_v(f_i))(1x_i:\text{boy}_N(x_i))\text{Ag}
(X_i)\text{Pat}](e_i))])(\text{p}_i)](\text{ep}_i)) \]

\(^{58}\) Note that Connolly considers the content component to be of a contextual nature (2007a: 20).
García Velasco & Portero Muñoz (2002: 22) further discuss understood objects in the Functional Grammar framework and argue for an anaphoric operator A that links the understood argument to its antecedent. In (104) below, the understood argument $p_1$ “Mary found out” is preceded by the anaphoric operator A and is co-indexed with $p_1$ in “John lied about his age”.

(104) John lied about his age, but Mary found out.

$$(p_1)[\text{Past } e_1; \text{Lie}[V](\text{John})(\text{his age})], \text{Past } e_2; \text{Find out}[V](\text{Mary})(\text{Ap}_1)]$$

To sum up, Functional Discourse Grammar represents the understood argument for the covert subject of imperative clauses at the semantic, though not at the pragmatic, morphosyntactic or phonological levels of representation. This creates an inter-level mismatch, though it avoids the use of an empty morphosyntactic category that would provide the semantic subject site with a syntactic counterpart.

5.5.5 CONCLUSIONS

Understood arguments are verbal (and non-verbal) arguments that are properly understood yet they are not explicitly expressed. The covert subject of imperative clauses is an understood argument because it is semantically interpreted yet not apparent in overt syntax. This creates a syntax-semantics mismatch that can be accounted for by a representational mismatch in a grammatical model or, alternatively, by a transparent mapping involving the use of an extra syntactic, theory-internal device to provide the semantic site of the subject of the imperative clause with a syntactic counterpart.

In a theory of language of the derivational type, mismatches are avoided. This is the case of Generative Grammar. Accordingly, the subject of imperative clauses,
present in semantics, has to be accounted for somewhere in syntax. Semantics is born from syntax, and syntax thus has to account for the semantics of the understood subject. An empty category such as pro or PRO appears at covert syntax such that it can be mapped into Logical Form and subsequently into the semantic component or, alternatively, a pronoun appears in covert syntax to be mapped into LF and to be deleted at Phonetic Form. The use of such devices allows for syntax-semantics transparency in that the semantic site of the elided subject has a syntactic counterpart. However, this brings about representational redundancy and the need for an extra, empty syntactic category.

Contrarily, in a theory of language of the parallel type, mismatches are allowed for. This is the case of the Parallel Architecture. Accordingly, the understood subject argument of imperative clauses does not have to be present in syntax in order to provide the semantic site of the understood subject with a syntactic counterpart. This avoids the use of an extra empty syntactic category, though at the cost of syntax-semantics transparency. The presence of the grammatical function tier, however, allows for the subject position to be kept unavailable for other arguments and for subject-verb agreement.

Finally, Functional Discourse Grammar, of a hybrid derivational type, also allows for mismatches. Although of a strong top-down nature, the four levels of representation are unique as to the information they provide such that inter-level transparency may be violated. Accordingly, the understood subject argument of imperative clauses is accounted for at the semantic level, though not at the pragmatic, morphosyntactic or phonological levels. Since it is not explicitly expressed, the variable is not instantiated at the semantic level but co-indexed with its antecedent in the Contextual Component. This mismatch helps the theory avoid the use of an extra, theory-internal, empty syntactic category -though at the cost of syntax-semantics transparency.
5.6 RAISING AND CONTROL

5.6.1 INTRODUCTION

Raising and control are structures that involve a matrix and an embedded clause showing a syntax-semantics mismatch between the number and distribution of semantic arguments, on the one hand, and of syntactic elements corresponding to those arguments, on the other. (105a) and (106a) illustrate cases of raising and control, respectively. (105b) and (106b) illustrate the relevant syntactic categories according to their syntactic function in the matrix clause (MC) and the embedded clause (EC). (105c) and (106c) are the semantic readings of (105a) and (106a) respectively.

(105) a. Raising seems to show a mismatch.
   b. \[ MC \text{Raising}_{\text{Subj}} \text{seems } [EC \text{to show a mismatch}] \]
   c. \[ MC \emptyset \text{seems } [EC \text{raising}_{\text{Undergoer}} \text{shows a mismatch}] \]

(106) a. Control attempts to avoid a mismatch.
   b. \[ MC \text{Control}_{\text{Subj}} \text{attempts } [EC \text{to avoid a mismatch}] \]
   c. \[ MC \text{Control}_{\text{Agent}} \text{attempts } [EC \text{control}_{\text{Agent}} \text{avoids a mismatch}] \]

In raising, a syntactic element of the matrix clause corresponds to a semantic argument of the embedded clause that has supposedly been raised from the subject or object position of the embedded clause into the matrix clause. A syntax-semantics mismatch arises therefore in the distribution of the semantic argument and that of the syntactic realization of that argument,
the former belonging to the embedded clause and the latter to the matrix clause. In (105) above, “raising” is the external argument of the embedded clause as shown in (105c) –“raising shows a mismatch”– but it is the syntactic subject of the matrix clause as shown in (105b) –“raising seems”. Raising gives rise therefore to a distributional rather than to a quantitative discrepancy. This is illustrated in Table 15 below. The bold type indicates the mismatch.

Table 15. Raising and the syntax-semantics interface

<table>
<thead>
<tr>
<th>RAISING</th>
<th>SYNTAX</th>
<th>SEMANTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity</td>
<td>1 NP</td>
<td>1 argument</td>
</tr>
<tr>
<td>Distribution</td>
<td>Matrix clause</td>
<td>Embedded clause</td>
</tr>
</tbody>
</table>

Contrarily, in control a syntactic element of the matrix clause corresponds to two semantic arguments, one in the matrix and one in the embedded clause. The syntax-semantics mismatch arises therefore between the number and distribution of the semantic arguments, on the one hand, and their syntactic realization, on the other. In (106) above, the syntactic subject “control” of the matrix clause -(106b)- corresponds to two semantic arguments, the external argument of the matrix clause –“control attempts”- and the external argument of the embedded clause –“control avoids a mismatch” –(106c). Control gives rise therefore to both a distributional and a quantitative discrepancy. This is illustrated in Table 16 below, in which the bold type indicates the mismatches.
5.6.2 RAISING

5.6.2.1 INTRODUCTION

Raising refers to those constructions that involve a syntax-semantics mismatch in that a semantically embedded unit is syntactically (and phonologically) expressed in the matrix clause, thus “raised” (from the embedded up to the hierarchically higher matrix clause)\(^{59}\). From a pragmatic point of view, raising can be seen as a strategy in which an active

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\(^{59}\) Note that the linear position of the raised element may be irrelevant in a language with rich case morphology if the raised element possesses a case marker indicating its having been integrated in the matrix clause.
referent is promoted to subject position such that the referent remains active in discourse, thus creating textual cohesion and becoming integrated in the matrix clause (see García Velasco fc.). The bold type in (107) below from Cheever’s *The Swimmer* (1964 (2010: 88)) illustrates an instance of raising.

(107) He needed a drink. Whiskey would warm him, pick him up, carry him through the last of his journey, refresh his feeling that it was original and valorous to swim across the county. Channel swimmers took brandy. He needed a stimulant. He crossed the lawn in front of the Hallorans’ house and went down a little path to where they had built a house, for their only daughter, Helen, and her husband, Eric Sachs. The Sachs’s pool was small and he found Helen and her husband there.

“Oh, Nedly, “ Helen said. “Did you lunch at Mother’s?”

“Not really, “ Ned said. “I did stop to see your parents.” This seemed to be explanation enough. “I’m terribly sorry to break in on you like this but I’ve taken a chill and I wonder if you’d give me a drink.”

(107) above illustrates an instance of subject-to-subject raising. The subject “this” syntactically belongs within the matrix clause but it can be said to have been raised from the subject position of the embedded clause, since it semantically belongs within the embedded clause “to be explanation enough”. This is clear from the fact that the bold type in (107) above can be paraphrased as (108) below, in which “this” belongs within the embedded clause and not within the matrix clause.

(108) It seemed that this was explanation enough.

(108) above illustrates that a paraphrase of (107) lowers the subject “this” from the matrix down to the embedded clause at syntax. Since “it” is an expletive, it is clear that the verb “to seem” requires a single thematic role (the bold type in (108)). This means that “seemed” in (107) is assigned one thematic role (that of “to be explanation enough”, the external argument of the
embedded clause, see e.g. Hornstein fc.) and that “this” is not an argument of “seemed” but of the predicate “explanation enough”. The fact that the verb “to seem” receives only one thematic role, that of its complement, explains why one can paraphrase (107) as (108) such that the matrix subject may be occupied by semantically different phrases and expletives with no semantic role as is illustrated in (109) below.

(109) This/it/there seemed to be explanation enough.

Note that subject-to-subject raising is only one type of raising. (110) and (111) below offer two further types of raising, namely subject-to-object raising and object-to-subject raising (see e.g. Postal 1974). In (110), the subject of the embedded clause “this” (“this$_{subj}$ is explanation enough”) is raised into the object position of the matrix clause (“I believed this$_{obj}$”), hence it is subject-to-object raising. In (111), the object of the embedded clause (“I tickle she-her$_{obj}$”) is raised into the subject position of the matrix clause (“She$_{subj}$ is easy…”), hence it is object-to-subject raising.

(110) I believed this to be explanation enough.

(111) She is not easy to tickle.

Since raising presents an apparent syntax-semantics mismatch, a model of grammar can choose to represent such a mismatch by means of a discrepancy between the semantic and the syntactic representations or, alternatively, the raised unit can be provided with a representation at a lower node at the syntactic representation that is later on raised such that the lower position mimics semantics. In the following sections, the approaches to raising that TGG, PA and FDG have are discussed and related to the architectural features of the model that constrain the choice of the model for one or the other representation.
5.6.2.2 TGG AND RAISING

Raising in the generative framework is usually accounted for by means of a movement procedure by which the external argument is born at the subject position within the embedded clause and is later on raised into the subject position within the matrix clause, leaving a co-indexed trace behind. This is illustrated in Figure 108 below for (112). The dotted rectangle indicates phonetically null categories representing the external argument of the embedded clause.

(112) This seemed to be explanation enough.
      (Cheever 1964 (2010: 88))

Figure 108. TGG and raising
As shown in Figure 108 above, “this” is born in the subject position of the embedded clause (Spec IP⁶⁰) and subsequently moves up to the subject position of the matrix clause. The co-indexed trace \( t_1 \) (also called the tail, what is left behind when the subject is raised) in the embedded clause is bound to its antecedent head \( \text{this}_1 \) in the matrix clause (see e.g. Hornstein 1999). Note that theta-role distribution takes place before movement does such that it is the external argument of the embedded clause, and not that of the matrix clause, that receives the role of undergoing “to be explanation enough”. Note also that an MP account (e.g. Chomsky 1995, see also Polinsky & Postdam 2006) would maintain that “this” is not raised from the embedded up into the matrix clause but rather copied from the embedded into the matrix clause such that only the highest copy is spelled out.

To sum up, TGG accounts for the mismatch created by raising such that the discrepancy is avoided in the representation. The external argument of the embedded clause is born within the embedded clause and is later on raised up into the matrix clause, leaving a trace behind. Alternatively, it is copied from the lower into the higher position such that only the higher copy is read at spell out. In both analyses, there is a one-to-one mapping between syntax and semantics in that the external argument of the embedded clause is provided with a syntactic counterpart (be it a trace or a copy).

5.6.2.3 PA AND RAISING

The Parallel Architecture adopts an in-between position regarding raising. There is a mismatch between the semantic and the syntactic representations. However, this mismatch is watered ...
down by the grammatical function tier (GFT). This is illustrated in Figures 109-112 for (113) below.

(113) This seemed to be explanation enough. ((=112))

First of all, the phonological structure of (113) in Figure 109 below illustrates that this level of representation runs independent from the syntactic and conceptual structures.

**Figure 109. PA and raising: phonological structure**

![Phonological structure diagram](image)

Secondly, the syntactic structure of (114) could look as presented in Figure 110 below such that the NP for “this” appears as a daughter of the higher VP and not as that of the embedded clause.

(114) This seemed to be explanation enough. ((=113))

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Thirdly, the conceptual structure of (114) above is such that SEEM has scope over [StateSING (α); PROX]₁ for “this”, as shown in Figure 111 below.

Finally, the grammatical function tier (see Figure 112) “solves” the mismatch created between Figures 110 and 111 for the syntactic and semantic representations of (114) above. The dotted rectangle indicates the extra, doubled grammatical function for the external argument of the embedded clause.

Figure 110. PA and raising: syntactic structure

\[ S_{12} \]
\[ \text{NP} \quad \text{VP} \]
\[ \text{Det}_1 \quad \text{V}_4 \]
\[ \text{V}_2 \quad \text{[Af, past]} \quad \text{to}_2 \]
\[ \text{V}_6 \quad \text{NP}_{10} \]
\[ \text{N}_8 \quad \text{AP}_9 \]

or

\[ [s [\text{NP Det}_1] [\text{VP} [\text{V}_2] [\text{Af}_3]]]_9 \]
\[ [\text{VP} [\text{to}_2] [\text{V}_6] [\text{NP} [\text{N}_8] [\text{AP}_9]]_{10}]_{11} \]

Figure 111. PA and raising: conceptual structure

\[ [\text{vert PAST}] [\text{vert SEEM}] [\text{vert BE}] [\text{vert SING (α); PROX}]_1 [\text{vert EXPLANATION}]_5 [\text{ENOUGH}]_{10} ]_1_1 \]

Figure 112. PA and raising: grammatical function tier

\[ [\text{GF}_{12}] [\text{GF}_1] [\text{GF}_{10}]_5 \]
In Figure 112 above, the grammatical function (GF) tier results in a non-semantic representation that mimics semantics (hence the hybrid approach of PA to raising), since there are two GF₁s that correspond to “this”. The dotted rectangle indicates the added, theory-internal element that more or less corresponds to a trace in TGG. In Figure 112, the first GF₁ corresponds to the subject “this” in its overt position. The second GF₁ corresponds to “this” in its covert position (where it receives its thematic role, and where it is interpreted). GF₁₀ corresponds to the object “reason enough”. Note that the matrix and the embedded clauses are represented as being independent from each other at the GF tier such that “to be explanation enough” is not an argument of “seemed”, thus does not receive a GF. There exists a rule in the PA that licenses the absence of a subject from an infinitival clause and the NP (“this”) is located in the matrix clause. There, it also needs to be assigned a GF, which it receives, thus becoming the subject of the matrix clause. Since the verb “to seem” has an “empty” GF, that of subject, and “this” needs a GF, the GF of subject can be assigned to “this”. If “this” were not in the subject position, the GF of subject of the matrix clause would be filled by an expletive (see Culicover & Jackendoff 2005: 197-199).

Note that the fact that there are two GF₁s means that there are two subjects in the GFT, but not at SS. Thus, only the left-most GF₁ is S-linked, i.e. only the left-most GF₁ is the subject of the matrix clause at SS. Contrarily, the right-most GF₁ is C-linked, i.e. it is a semantic argument of the embedded clause. Note that such a representation “records the step-by-step connection from the semantic position that assigns the GF in the lowest clause to the syntactic position where the GF is finally realized” (ibid: 198).

To sum up, the PA accounts for raising such that a syntax-semantics mismatch is created in that the NP corresponding to the matrix subject occupies a higher position in syntax than it does in semantics. However, this mismatch is made more transparent in that the argument of the embedded
clause is provided with two grammatical functions for the external argument of the embedded clause, one as subject of the embedded clause before it has been removed from it (always, within the grammatical function tier), and another one, also as subject, once it has been positioned in the matrix clause. Since the grammatical function tier expresses syntactic functions, the doubling of grammatical functions for the external argument of the embedded clause introduces an unexpected, transparent syntax-semantics interface.

5.6.2.4 FDG AND RAISING

Functional Discourse Grammar represents raising such that a mismatch appears between the various levels of representation (see Hengeveld & Mackenzie 2008: 367-372). This is illustrated in Figure 113 for (115) below. The dotted rectangle indicates theory-internal categories that have been introduced in order to account for the interpretation of the external argument of the embedded clause in (115) that have no phonetic realization.

(115) This seemed to be explanation enough. ((=114)

Figure 113. FDG and raising

As illustrated in Figure 113 above, the Interpersonal Level contains one referential subact R₁ for “this” in (115). Note that (115) constitutes a single discourse act A₁ at IL. At the
Representational Level, “seem” takes “this was explanation enough” as its argument –(p). At the Phonological level, we encounter two Phonological Phrases /ðiːsiːmdtubi/ and /eksplænːfænəl/. At the Morphosyntactic Level, “this” receives two (NP)_{Subj}. Since “this” is only the overt subject of the matrix clause, the second (NP)_{Subj} is empty (\(\emptyset\)). The presence of a non-realized subordinate subject in the embedded clause is necessary in order to trigger active voice (see *ibid*: 372). However, the fact that the introduction of such an empty Np in the embedded clause is necessary to trigger the right voice is counter argued by three facts: firstly, the morphosyntactic cues of the passive voice (verb to be+past participle, by-object) should be enough to identify a case of passivization; secondly, the presence of an object in the embedded clause that corresponds to an undergoer/patient argument at RL should also be enough to identify the correct distribution of grammatical functions, thus of voice; thirdly, the introduction of an empty syntactic category that is unpronounced would lead to the need for a deletion rule, thus against the main tenets of the theory. Furthermore, and as opposed to control (see next section), the subject of the embedded clause in raising never appears overtly.

To sum up, Functional Discourse Grammar accounts for raising by means of a representational mismatch. This reflects the tension between the different levels of representation, which is in fact the defining characteristic of raising (see García Velasco fc. for an account of raising in FDG). The mismatch is produced in that the interpersonal and the representational levels represent the raised element by one interpersonal and representational unit respectively, while the morphosyntactic level has two slots: one for the actual position in which the raised element appears (in the matrix clause), and one for the position in which it is actually interpreted (in the embedded clause). This leads to the introduction of an extra, empty nominal phrase at the ML in the embedded clause that mimics the semantic, lower scope of the raised element.
5.6.3 CONTROL

5.6.3.1 INTRODUCTION

Control is a similar phenomenon to that of raising in that in both cases a unit is syntactically absent but is nevertheless properly interpreted within the scope of an embedded clause. However, whereas in control the subject/object of the matrix clause is interpreted as an argument of both the matrix and the embedded clause, in raising the subject/object of the matrix clause is only interpreted as an argument of the embedded clause. The bold type in (116) from Fitzgerald’s The Curious Case of Benjamin Button ((1921 (2010: 31)) below illustrates control phenomena.

(116) Nevertheless he persisted in his attitude. He brought home lead soldiers, he brought toy trains, he brought large pleasant animals made of cotton, and, to perfect the illusion which he was creating— for himself at least—he passionately demanded of the clerk in the toy-store whether “the paint would come off the pink duck if the baby put it in his mouth.” But, despite all his father’s efforts, Benjamin refused to be interested. He would steal down the back stairs and return to the nursery with a volume of the “Encyclopaedia Britannica”, over which he would pore through an afternoon, while his cotton cows and Noah’s ark were left neglected on the floor. Against such a stubborness Mr. Button’s efforts were of little avail.

Note that in this case the subject “Benjamin” does not seem to have been raised from the embedded into the matrix clause, since it is not only interpreted in the embedded, but also in the matrix clause. This means that “Benjamin” is assigned two theta-roles, one as external argument of the matrix clause (“refuser”), and one as external argument of the embedded clause (the undergoer of “to be interested”). This is why, as opposed to raising, control cannot show all kinds of subjects in the matrix clause (see Hornstein fc., Rooryck 1992). If an expletive were placed as the subject of the matrix clause, the external argument of the matrix clause would receive no
thematic role, which would yield ungrammaticality. This is illustrated in (117) below.

(117) Benjamin/he/*it/*there refused to be interested.

In instances of control as in the bold type in (116), a mismatch is produced in that the syntactic unit “Benjamin” is interpreted twice, both as an argument of the matrix and as an argument of the embedded clause. A theory of language can account for such a mismatch by means of a further mismatch in the representation of the syntactic and the semantic levels such that the argument appears twice at the semantic level and once at the syntactic level, either as subject or object of the main clause. Alternatively, a theory of language can account for this mismatch such that the unit is represented twice at syntax (as the subject of the embedded clause and as the subject or object of the matrix clause) in order to mimic semantics, which should also have two arguments for the controlling and the controlled unit, one for the matrix and one for the embedded clause. In that case, an empty category or extra, theory-internal, phonetically null lexical element needs to be introduced at syntax so as to provide the argument of the embedded clause with a syntactic counterpart, thus matching semantics.

5.6.3.2 TGG AND CONTROL

Traditional Generative Grammar offers various accounts of control. In The Standard Theory (Chomsky 1965), control is accounted for by equi-NP deletion such that the subject of the embedded clause is deleted under co-referentiality with the subject/object of the matrix clause: “Equi-NP deletion takes place between a main clause and a complement clause: when an argument in the main clause is coreferential with one in the complement clause, the coreferential complement argument is deleted” (Brainard 1997: 112). Figure 114 below suggests a
representation of (118) according to this approach. The dotted rectangle indicates phonetically null elements introduced at syntax to counterpart semantics. In Figure 114, the underlying (at Deep Structure) $NP_1$ “Benjamin” in the embedded clause is a full lexical item at DS but it is phonetically null. It is introduced in order to account for the external argument of the embedded clause but it is subsequently deleted (at Surface Structure) due to identity with the $NP_1$ “Benjamin” at the matrix clause. As noted for raising, both subjects can be said to have been born at Spec VP and have been moved up later on into Spec IP.

(118) Benjamin refused to be interested.
(Fitzgerald (1921 (2010: 31))

Figure 114. TGG and control: equi-NP deletion

In later accounts of Generative Grammar (Chomsky 1972, 1981), control is accounted for by inserting the lexical item PRO, a theory-internal device that functions as the subject
of the embedded clause. PRO is a base-generated, anaphoric DP that is phonetically null and related to its antecedent through construal (Hornstein 1999). PRO can be said to be “a consequence of earlier assumptions such as Structural Uniformity” (Culicover & Jackendoff 2005: 77). The antecedent is the “controller” and PRO is the “controlee”. This is illustrated in Figure 115 below for (119), where the DP₁ PRO in the embedded clause is thus controlled by the antecedent DP₁ in the matrix clause. The dotted rectangle indicates the empty category introduced to counterpart semantics, PRO.

(119) Benjamin refused to be interested. ((=118))

Figure 115. TGG and control: PRO

Finally, more recent accounts of control suggest a movement analysis such that the DP from the embedded clause
(PRO in the Extended Standard Theory and Government and Binding) moves from the argument position of the embedded clause (Spec vP) up into SpecIP of the embedded clause, then up to the argument position of the matrix clause (Spec vP) and finally up to SpecIP of the matrix clause (see Hornstein 1999, O’Neil 1995a, 1995b, cf. Culicover & Jackendoff 2001). This is illustrated in Figure 116 below for (120). Dotted rectangles indicate phonetically null traces that are left behind by the DP born at Spec vP of the embedded clause. Note that this analysis belongs within the minimalist tradition such that internal arguments are born within the VP shell but external arguments are born within the vP shell (an intermediate shell between IP and VP; “v” stands for “light verb” or phonetically null verb whose meaning strongly depends on that of the complement – see e.g. Hornstein, Nunes & Grohmann 2005). According to this analysis, the DP “Benjamin” is moved up from Spec vP to Spec IP of the embedded clause, then up to Spec vP and finally to Spec IP of the matrix clause leaving three traces behind. The verbs “refused” and “to be” are also moved up from V to v such in the matrix and the embedded clause respectively such that the surface word order is obtained.

(120) Benjamin refused to be interested. ((=119))

To sum up, Generative Grammar offers various accounts of control that mimic the semantics of the shared external argument at syntax. In pre-GB accounts, the semantic argument of the embedded clause is provided with a syntactic counterpart that is deleted later on in the derivation. In GB accounts, the semantic external argument of the embedded clause is provided with a syntactic counterpart PRO, an abstract, phonetically null category. In post-GB accounts, the external argument of the embedded clause is moved up from the external argument position into the Spec IP of the embedded clause and subsequently up to the external argument position up to Spec IP of the matrix clause. In these processes, phonetically null traces
are left behind. In all three cases, syntax-semantics transparency is maintained at the cost of the redoubling of elements (deletion) or the introduction of empty categories (PRO, traces left behind due to movement) that mimic semantics. These provide a syntactic counterpart of the shared argument, but receive no phonetic reading and thus increase the theory’s abstractness.

**Figure 116. TGG and control: movement**
5.6.3.3 PA AND CONTROL

The Parallel Architecture accounts for control structures at the conceptual structure and grammatical function tier, though not at the phonological or syntactic structures. The mismatch created between syntax and semantics in control phenomena (one external/internal argument for the matrix clause and one external argument for the embedded clause vs. only one overt subject for the matrix clause) is thus maintained in the formalism. The grammatical function tier, however, doubles the number of grammatical functions for the doubly interpreted argument such that the embedded external argument can be assigned subject function within the embedded clause. The mismatch created between the various levels of representation is shown in Figures 117-120 below for the phonological, syntactic, conceptual and grammatical function structures of (121).

(121) Benjamin refused to be interested. (120)

Firstly, the phonological structure of (121) in Figure 117 below consists of two phonological phrases PhonPh$_5$ and PhonPh$_9$ that contain no phonological representation of the external argument of the embedded clause.

Figure 117. PA and control: phonological structure
Secondly, the syntactic structure of (122) below possesses no syntactic category to provide the external argument of the embedded clause with a syntactic counterpart. The embedded clause of the control structure has thus no invisible subject (see Culicover & Jackendoff 2005: 376) and control is not accounted for at SS. This is illustrated in Figure 118.

(122) Benjamin refused to be interested. ((=121))

Figure 118. PA and control: syntactic structure

Thirdly, Figure 119 illustrates that the conceptual structure for (123) treats control as a semantic binding phenomenon such that BENJAMIN$^\alpha$ (the antecedent) binds the first argument of REFUSE, $\alpha$ (the bound anaphor) (see ibid: 218). This establishes a syntax-semantics mismatch in that "Benjamin" receives one NP at SS but two semantic representations at CS, BENJAMIN$^\alpha$ and $\alpha$. 
Fourthly, the grammatical function tier establishes the grammatical function of both external arguments by providing “Benjamin” with two GFs. This is illustrated in Figure 120 below for (122).

Note that $\alpha$ from the embedded clause at CS is mapped into GF$_{11}$ at GFT (see *ibid* 376). GF$_{11}$ is necessary in order to prevent any other NP from becoming the subject per default (see *ibid*: 195) and it is CS-linked, though not SS-linked. Note also that GF$_1$ and GF$_{11}$ are independent and, according to PA, if a bound variable $\alpha$ at CS is the highest-ranked GF of a particular clause at GFT, the clause may be realized as an infinitive or a gerund that has no sentence node, no tense and no subject (see *ibid* 194-195). This is why “to be interested” in “Benjamin refused to be interested” appears as an infinitival clause.

To sum up, the PA accounts for the mismatch created in control structures by means of a syntax-semantics mismatch such that semantics represents the external argument of the matrix clause by means of an antecedent and that of the embedded clause by means of a bound anaphor, while only the overt subject of the matrix clause is represented at syntax. The covert subject of the embedded clause receives therefore no syntactic representation but it does receive a semantic one, hence the mismatch. In turn, the antecedent and the bound variable are linked to two grammatical functions such that the
antecedent obtains subject/object function and the bounded variable obtains subject function.

5.6.3.4 FDG AND CONTROL

Functional Discourse Grammar accounts for control in the same way as for raising, except that the Representational Level has two variables that represent the overt subject of the matrix clause, one as an argument of the matrix, and one as an argument of the embedded clause. In raising, however, the Representation Level has only one variable to account for the overt subject of the matrix clause, a variable that appears as an argument of the lower predicate. This is illustrated in Figure 121 below for (123). Dotted rectangles indicate theory-internal, phonetically null elements introduced in order to account for the covert subject/external argument of the embedded clause at ML.

(123) Benjamin refused to be interested.  

Figure 121. FDG and control

\[ (M_I); ([A; (f; DDEC(f,)) (P,)) (P,)) (\Phi,); ([R; (T,)) (T,)) (\Phi,)) ([C,]) ([A,]) (M,)) \]

\[ (P,); (past ep,); (e,); ([f,]; ([f,] (x,)) (l,); ([l,] (x,)) (l,)) ([f,]) (e,); (ep,)) (p,) \]

\[ (L_E,); ([C,]; ([Np,] (Vp,)) (C,); ([Np,] (Vp,)) (A,); (A,); (C,); (A,); (C,); (L_E,) \]

\[ (U,); ([P,]; /bendʒæm'n(r)afju:zd/ (V_P,)) (P,); /tablntærstd/ (V_T,) (V_P,) (P,) (U,) \]

As illustrated in Figure 121 above, there exists a mismatch in the representation of (123). At the Interpersonal Level, there exists one subact of reference \( R_I \) for “Benjamin”. At the Phonological level, Benjamin is represented as the unit /bendʒæm'n/. At the Representational and the Morphosyntactic Level, the overt subject of the matrix subject appears
represented twice. At the Representational Level, “Benjamin” is represented twice as \((x_i)_A\), one as the agent of refusing and another one as the agent of being interested. In contrast to raising, the overt subject of the matrix clause in control structures has a thematic role, which is why \((x_i)_A\) appears as an argument of the matrix clause as well. At the Morphosyntactic Level, “Benjamin” is represented twice as \((\text{Np})_{\text{Subj}}\), once as subject of the matrix, and one as subject of the embedded clause. By providing the embedded clause with an empty \((\emptyset)\) \((\text{Np})_{\text{Subj}}\), the relevant voice distribution can be triggered (see Hengeveld & Mackenzie 2008: 372). As with raising, the introduction of such an empty Np in the embedded clause poses three problems: firstly, the morphosyntactic cues of the passive voice (verb to be+past participle, by-object) should be enough to identify a case of passivisation; secondly, the presence of an object in the embedded clause that corresponds to an undergoer/patient argument at RL should also be enough to identify the correct distribution of grammatical functions, thus of voice; thirdly, the introduction of an empty syntactic category that is unpronounced would lead to the need for a deletion rule, thus against the main tenets of the theory.

To sum up, Functional Discourse Grammar accounts for control with a mismatch. At the pragmatic level, the overt subject of the matrix clause is represented once by means of a referential subact. At the Phonological Level, the covert subject of the matrix clause is also represented once. At the semantic level, the overt subject of the matrix clause is represented twice, once in the matrix clause and once in the embedded clause. This is so, since the subject of the matrix clause is interpreted as the external argument of both the matrix and the embedded predicate. At the Morphosyntactic Level, the overt subject of the matrix clause is represented twice such that there is an empty subject also at the embedded clause and this acquires the correct voice. Therefore, the Morphosyntactic level shows a theory-internal, empty category that provides the external argument of the embedded clause with a syntactic counterpart.
5.6.5 CONCLUSIONS

Raising and control are phenomena that show a syntax-semantics mismatch. In raising, a syntactic element of the matrix clause corresponds to an argument of the embedded clause. In control, a syntactic element of the matrix clause corresponds to a semantic argument of the main clause and to a further argument of the embedded clause. Since these phenomena produce a syntax-semantics mismatch, a theory of language can account for such mismatches by means of a discrepancy between the representation of these structures at the different levels of representation or, alternatively, by avoiding a representational mismatch in that all semantic arguments are provided with syntactic counterparts in the position in which those arguments are supposed to be given their thematic role. The choice that a theory of language makes as to how to account for raising and control are determined by the theoretical tenets of the grammatical model at hand. If the theory is of the derivational type, mismatches will be avoided and all semantic arguments will be provided with syntactic counterparts, giving rise to the use of theory-internal devices such as empty categories or traces. If, on the other hand, the linguistic theory in question is of the autonomous type, mismatches will be allowed for. In this case, a mismatch as that arising in raising and control may be accounted for by mismatching representations at the syntactic and semantic levels and further constraints will determine to what extent those representations can be mismatching and how to relate them by means of interfaces.

Accordingly, traditional Generative Grammar, of the derivational type, attempts to avoid mismatches created in raising and control. In raising, a movement mechanism is introduced such that the “raised” syntactic element in the matrix clause is said to be born in the position of the embedded clause where the argument of that element is interpreted and it is subsequently raised into the matrix position, leaving a trace behind. This means that the semantic argument of the embedded
clause receives a syntactic counterpart, the trace. In control, the syntactic element of the matrix clause that is interpreted as an argument of both the matrix and the embedded clause is said to be a controlee of an empty category, PRO. This phonetically non-realized element is located where the argument of the embedded clause receives its semantic role. Its antecedent, the controlee, is located in the matrix clause, where it receives its thematic role. In this way, correspondence between syntax and semantics is of a one-to-one nature. Further accounts of control in the generative tradition are the deletion approach, in which the shared argument is said to be present also at the deep syntactic level in both the embedded and the matrix clause as full lexical items. Since it is not pronounced in the embedded clause, the syntactic counterpart in the embedded clause is deleted in further stages of the derivation at surface structure under identity with the NP in the matrix clause. This provides the semantic argument of the embedded clause with a syntactic counterpart. Finally, a more recent approach, movement, accounts for control such that the syntactic element of the matrix clause that is interpreted as an argument of both the matrix and of the embedded clause is said to be born at the embedded clause and then move progressively up into the matrix clause. A trace is left at the initial position, where the semantic argument is supposedly born within the embedded clause. This provides a syntactic counterpart for the semantic argument of the controlee.

Contrarily, the Parallel Architecture is a theory of the autonomous or parallel type and hence allows for representational mismatches. In raising, the syntactic element of the matrix clause appears with scope over the embedded clause. In semantics, the argument for this element is displayed such that its scope belongs within the embedded clause. This means that a syntax-semantics mismatch is created. However, the grammatical function tier has two grammatical functions, one for the subject of the matrix clause and one for the (covert) subject of the embedded clause. In control, the shared argument is represented twice at semantics by means of an antecedent
with scope over the embedded clause and a bound variable in the embedded clause. At syntax, the syntactic element corresponding to the shared argument is only represented once such that it has scope over the embedded clause. The grammatical function tier, again, doubles up the number of grammatical functions assigned to the syntactic element with double argument interpretation such that one grammatical function is assigned to the controller and one to the controlee.

Finally, Functional Discourse Grammar, a theory with some traits of derivationality but partly of the autonomous type, displays features of both approaches. In the representation of raising, a mismatch is created in that the syntactic unit of the matrix clause that is raised is represented with scope over the embedded clause while the corresponding argument appears within the scope of the embedded clause. However, an extra, empty nominal phrase that is co-indexed with that of the matrix clause for the raised element is represented as the subject of the embedded clause, a move more typical of a fully derivational theory of language than of a theory of the autonomous type. In control, a mismatch is avoided. At the semantic level, there are two arguments, one in the matrix and one in the embedded clause that represent the shared argument. At the syntactic level, a nominal phrase with subject function represents the overt position of the syntactic element in the matrix clause. Again, an extra, empty nominal phrase counterparts the semantic argument of the embedded clause at morphosyntax. Thus, although allowing for mismatches, the theory clearly favors representational transparency in raising and control.

5.7 CONCLUSIONS

In this chapter, I have analyzed various linguistic phenomena that violate the default transparency of languages. I have focused on the violation of syntax-semantics interface transparency and used thereto the following phenomena: sluicing, small clauses, pseudo-
coordination and pseudo-subordination, understood arguments, interjections, raising and control. These phenomena illustrate an infringement upon the transparency of the syntax-semantics interface in various ways. Sluicing, small clauses, interjections and understood arguments are phenomena in which semantics seems to be richer than syntax, i.e. more is meant and understood than is actually said. In raising, the default transparency of languages in the mapping between syntax and semantics is violated in the distribution of syntactic and semantic structure, i.e. the linearity of meant and understood linguistic material does not correspond with the linearity of syntactic material. In control, both violations take place: meant and understood linguistic material seem to be richer than syntax, and the linearity between them is also infringed upon. Finally, in pseudo-coordination and pseudo-subordination, semantics and syntax do not differ in quantity or distribution. Rather, they contravene the default association that normally takes place between semantic and syntactic categories - syntactic coordinate categories are used to express subordination and syntactic subordinate categories are used to express coordination.

These violations of the transparent mapping between syntax and semantics can lead to a mismatch in their representation such that the syntactic and the semantic levels of representation contravene the transparent mapping in the ways explained above. For ellipsis and understood arguments, small clauses and interjections, a theory of language may represent more categories in semantics/pragmatics than it does in syntax, thus creating a representational mismatch in the quantity and length of representations. For raising, a theory of language may represent at the syntactic level the overt linearity of what is said while the semantic level represents the order in which those syntactic constituents are meant or understood, thus creating a representational mismatch in the distribution of representations. In control, a theory of language may represent more categories in semantics than in syntax respecting the non-linear distribution of semantics in relation to syntax, thus creating both a distributional
and a quantity mismatch in the various representations. Finally, in pseudo-coordination and pseudo-subordination a theory of language may assume a representational mismatch between syntax and semantics to account for syntactically coordinate structures that have a subordinate reading and for syntactically subordinate structures that have a coordinate interpretation. A theory of language that makes these choices in the formalization of mismatches, i.e. by discrepancies in the number, type and distribution of syntactic and semantic representations needs to be a theory which possesses independent syntactic and semantic levels of representation such that these discrepancies are allowed for. Such a theory of language is a theory of the parallel type in which syntax and semantics do not hold a relation of derivation.

Contrarily, a theory of language that belongs to the derivational type cannot show such mismatches in the representation of these linguistic phenomena. The syntactic and semantic levels hold a relation of derivation and thus need to mirror each other's representation in the formalism. Such a theory of language has to look for a different mechanism in order to represent phenomena that show a syntax-semantics mismatch, since the discrepancy cannot be reproduced in their representation. Accordingly, for ellipsis, understood arguments, small clauses and interjections, a theory of language of the derivational type cannot possibly represent more categories in semantics than it does in syntax, since that would create a representational mismatch in the quantity and length of representations. In these cases, an empty unpronounced syntactic category can be introduced at syntax to provide those semantic categories that do not have an overt syntactic counterpart with one. For raising, a derivational theory of language cannot represent at the syntactic level the overt linearity of what is said while the semantic level represents the order in which those syntactic constituents are meant or understood as a parallel theory would do, since that would bring about a representational mismatch in the distribution of representations. Instead, an empty category is introduced at
syntax, that where the semantic argument occurs, should the mapping be completely transparent. In control, a theory of language of this type cannot represent more categories in semantics than in syntax respecting the non-linear distribution of semantics in relation to syntax, since that would create both a distributional and a quantity mismatch between the syntactic and the semantic representations. Again, an empty category is introduced at syntax such that the syntactic linearity corresponds to the semantic one and the mapping between levels can be straightforward. Finally, in pseudo-coordination and pseudo-subordination, a derivational theory of language cannot assume a representational mismatch between syntax and semantics to account for syntactically coordinate structures that have a subordinating reading and for syntactically subordinate structures that have a coordinate interpretation just as a parallel theory of language would do. In order to avoid a mismatch in the representation, syntactic coordinate structures need to be semantic coordinate structures, and syntactic subordinate structures need to be semantic subordinate structures. The non-default subordinate and coordinate readings arising in pseudo-coordination and pseudo-subordination respectively may then be accounted for as pure pragmatic differences.