

REVERSE SLUICING IN MODERN GREEK; A NEW ANSWER TO AN OLD PROBLEM*

Athanasios Tsiamas
McGill University

Elliptical phenomena have captured the attention of language researchers under a framework of a Generative Grammar as early as Chomsky (1965). More recently, the works of Sag (1976) and Williams (1987) have provided some important insight on the conditions that govern ellipsis. This paper will focus on the properties of a special elliptical phenomenon present in both English and Greek and dubbed by Giannakidou and Merchant (1998) as reverse sluicing. After a brief review of a previous analysis of this phenomenon, an alternative theoretical account will be laid out that addresses the main properties of reverse sluicing and can be extended to other elliptical phenomena.

1.0. Reverse Sluicing; Definition and Basic Properties

Giannakidou and Merchant (G&M, 1998), define reverse sluicing as an elliptical phenomenon where we have constructions that consist of a co-ordination of a wh-complementizer with a CP containing a wh- phrase. This is shown in (1):

- (1) It's not clear if and when Mary bought the book.
'It's not clear if Mary bought the book and when she bought it.'

The interpretation of (1) indicates an underlying LF representation where the elided IP (EC) of the left most coordinate CP (IP1) is interpreted as the exact copy of the spelled out one present in the second coordinate (2):

- (2) It's not clear [_{CP1}if [_{IP1}<Mary bought the book>]] and [_{CP2}when [_{IP2}Mary bought the book]]¹

This is also true for Greek², as we can see in (3):

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¹ Phonetically null XPs will be included in brackets (i.e., <...>). As a matter of convention the antecedent clause will always be given the index 1 (i.e., IP₁), while the elided will be given the index 2.

² Extra information on case and tense (Greek overtly marks nominals and verbs for case, number, gender and tense, person and agreement respectively) is generally omitted from the Greek data. However, it will be provided to alleviate confusion when and where necessary.

- (3) δen $\acute{in}e$ $ak\acute{o}ma$ $saf\acute{e}s$ [_{CP1}an [_{IP1}< $\acute{e}fije$ i $Mar\acute{ia}$ >]] ke [_{CP2} $p\acute{o}te$ / $jat\acute{i}$
 not is yet clear if left the M. and when / why
 [_{IP2} $\acute{e}fije$ i $Mar\acute{ia}$]]
 left the M.
 ‘It’s not clear yet if Mary left and (if that’s true) when/why she left.’

1.1. The Problem – Cross-linguistic Differences

Reverse sluicing is far more restricted than other instances of ellipsis. Let us examine the following examples from English and Greek:

- (4) a. Mary argued with someone, but I do not know with whom
 ‘Mary argued with someone, but I do not know with whom M.
 argued’
- b. i $Mar\acute{ia}$ $m\acute{a}lose$ me $k\acute{a}pjon$ $al\acute{a}$ δen $ks\acute{e}ro$ me $pjon$
 the M. argued-3sg with someone but not know with whom
 ‘Maria argued with someone, but I do not know with whom M.
 argued’
- (5) a. He is leaving, but I do not know when.
 ‘He is leaving, but I do not know when he is leaving’
- b. $f\acute{e}vji,$ $al\acute{a}$ δen $ks\acute{e}ro$ $p\acute{o}te$
 leave -3sg but not know-1sg when
 ‘(s)he is leaving, but I do not know when (s)he is leaving’

The examples above involve sluicing, an elliptical phenomenon where a *wh*-phrase appears where an embedded CP normally would and is taken as modifying some IP present in the linguistic context. We can see that it is possible for both argument (4) and adjunct positions (5) to be sluiced.

In the same way, both languages allow adjuncts to emerge in reverse sluicing constructions, as already shown in (1) and (3) above. However, while arguments in Greek are able to be reverse-sluiced, this is not possible in English:

- (6) a. * It is not clear if and who the police have arrested.
 ‘It is not clear if the police have arrested someone and (if that’s true) who the police have arrested.’
- b. δen $\acute{in}e$ $ak\acute{o}ma$ $saf\acute{e}s$ an ke $pjon$ $sin\acute{e}lave$ i $astinomia$
 not is yet clear if and whom arrested the police
 ‘It is not clear yet if the police have arrested someone and (if that’s true) who the police have arrested’
- (7) a. * John doesn’t know if and whom Mary will give the book to
 ‘John doesn’t know if Mary will give the book to someone, and (if that’s true) to whom she will give it to’

- b. O Jánis ðen kséri an kai se pjon tha ðósi
 the J. not know-3sg if and to whom will give-3sg
 i María to vivlío.
 the M. the book
 ‘Janis does not know if Mary will give the book to someone
 and (if that’s true) to whom she will give it to.’

As shown in the examples above, all cases of reverse sluicing with arguments in both transitive (6) and ditransitive (7) constructions are not possible in English.. On the other hand, the Greek sentences are licit.

The asymmetry of the behavior between argument and adjunct positions in reverse sluicing is reminiscent of several other asymmetries of this type (for example, of the ECP effects in *wh* questions) However, the differences between English and Greek with respect to the grammaticality of arguments in reverse sluicing cannot be captured by generic analyses that would render either the use of adjuncts or that of arguments as ungrammatical.

2.0. A First Account for the Problem; Giannakidou and Merchant (1998)

Giannakidou and Merchant’s analysis of reverse sluicing follows the theoretical assumptions of a previous account of sluicing by Chung et al. (1995). The key insight of their account relies on an independent difference between the two languages; Greek allows null indefinite DPs which license reverse sluicing with arguments, while English does not. In the following paragraphs we will summarily present the main points of this analysis.

2.1.0. Reverse Sluicing and the Null DP Hypothesis

In general, Greek does not allow null definite DPs. As shown by Philippaki-Warbuton and Catsimali (1999), definite objects cannot be elided:

- (8) Vlêpo ton Jáni na *(ton) spróxnun.
 see-1sg the J.-acc SUBJ him-cl_{ACC} push-3pl
 ‘I see Janis getting pushed’

As we can see in (8) above, if the direct object (in this case, a clitic) is elided, this results in ungrammaticality. However, as shown from examples from discourse, indefinite objects³ can be elided:

- (9) – éfere i María kápja/ meriká vivlíia / ta vivlíia?
 Brought-3sg the M. some/any books / the books
 ‘Did Mary bring some/any books?’

³ What about subjects? Greek is a pro-drop language, so the data cannot be conclusive (i.e., we wouldn’t know whether the subject can be omitted because the language allows null indefinite DPs, or because *pro* is present).

- ne, éfere (kápja/meriká) / - ne, *(ta) éfere
 Yes, brought-3sg some/any / yes, them-cl_{acc} brought-3sg
 ‘Yes, she brought (some, any)’ / ‘Yes, she bought them’

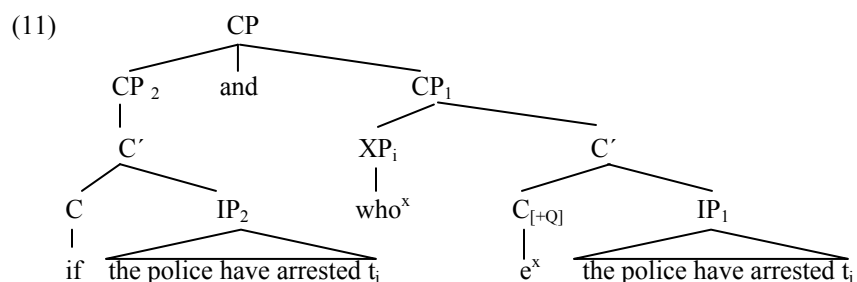
While indefinite objects can be elided in Greek, this is not possible for English:

- (10) - Did Mary bring some/any/the books?
 - Yes, she brought *(some/ them)

According to G&M, the different patterns observed in reverse sluicing follow from the existence of null indefinites in Greek, under some additional claims I will describe in the next subsection.

2.2.0. The Mechanisms behind Reverse Sluicing; The Operations of Pruning and Vehicle Change

As already mentioned, Giannakidou and Merchant base their analysis of reverse sluicing on that of Chung et al.’s for sluicing. In particular, they adopt a tripartite analysis of quantificational structures (Heim 1982) and assume a process of IP copying, where the elided IP is a copy of the antecedent one. Thus, for (6a), the coordinate CP will have the following LF representation:



The application of IP-copying is not trouble-free; there is an unbound trace in the IP₂ in (11) and therefore the structure should be uninterpretable. This would account for the ungrammaticality of reverse sluicing with arguments in English, since there is always going to be an unbound trace present in IP₂ at LF resulting in lack of interpretability.

Nevertheless, if this were the case, reverse sluicing would always be impossible in languages (the copies of adjunct traces would also be unbound), leaving the grammaticality of sentences like the (1), (3) and (6b, 7b) unaccounted for. In order to account for these structures, G&M argue for the operation of two LF mechanisms, pruning and Vehicle Change.

2.2.1. Pruning

For G&M, **pruning** is responsible for the grammaticality of reverse sluicing constructions with adjuncts. In particular, they introduce and define pruning as a

structure modification operation that **deletes** adjunct traces, but is otherwise restricted since it cannot alter argument structure.

After IP-copy, the co-ordinate CP in (1) will have the structure given in (12a). However, there is now an unbound trace in IP₂ and the derivation should crash. It's only after the application of pruning that the unbound adjunct trace is deleted and the derivation is licit (12b):

- (12) a. [CP [CP₂if [IP₂<Mary bought the book t_i>]] and [CP₁when [IP₁Mary bought the book t_i]]
 b. [CP [CP₂if [IP₂<Mary bought the book >]] and [CP₁when [IP₁Mary bought the book t_i]]

Pruning is argued to be the opposite operation to sprouting, a structure building mechanism which generally provides **adjunct traces** in sluicing constructions (Chung et al., 1995). Let us examine the sentence in (13a):

- (13) a. Mary left but I don't know when
 b. Mary [IP₁left] but I don't know [CP₂when [IP₂<Mary left>]]

Assuming that IP₂ is recovered though IP-copying, there is a problem arising because the wh-operator has no variable to bind (as shown in 13b). To resolve this, Chung et al. argue that the necessary adjunct PP trace is provided by sprouting, and thus grammaticality is restored⁴:

- (14) Mary [IP₁left] but I don't know [CP₂when_i [IP₂<Mary left [PP t_i>]]

However, since pruning like sprouting cannot alter argument structure, an extra operation is needed to account for the Greek data. Giannakidou and Merchant argue that this is Vehicle Change.

2.2.2. Vehicle Change (Fiengo and May, 1994)

For Fiengo and May (1994), an NP can be pronominal (i.e., have a feature [+pronoun]) or non-pronominal ([-pronoun]). This holds true for both phonetically realized NPs and phonetically null ones. By providing evidence from condition C violations, the authors argue that nominals are not distinct with respect to their pronominal status. This is defined as vehicle change.

Let us see now why vehicle change is necessary:

⁴ Like pruning, sprouting cannot alter the argument structure of a verb. Thus, it cannot add arguments not predicted by the argument structure or already saturated. However, sprouting can provide an argument trace, when it is that of an implicit argument. We will return to this issue in a later section of the paper. Suffice to say for now, that sprouting is an operation that "fills in blanks" at LF when needed. In the same way, it will always add the "correct" adjunct trace (i.e., one that could be required by the verb, and crucially one that is not already present).

- (15) a. Mary thinks I like John and he thinks I do too
 b. Mary thinks I [_{VP1}like John_i] and he_i thinks I [_{VP2} <like John_i>] too.

If the elided VP (VP₂) is interpreted as a copy of the antecedent one, the sentence in (15) should incur a violation of Principle C (since *John* is bound by *he*). However, if the R-expression is interpreted as [+ pronominal] (i.e., **him**), the problem is resolved. (i.e., the pronoun is now free in its governing category)

Based on this evidence, G&M argue that for languages that allow null indefinite DPs the unbound wh-trace in a sentence like (11) can be interpreted as a pronominal element. For English, this is not possible, as shown in (10). For Greek on the other hand, vehicle change can apply; the wh [-pronominal] trace is converted to a null indefinite DP, a *pro* like (non –generic) element.

2.3.0. Evaluation of the Analysis

Giannakidou and Merchant's analysis is able to account for the data in question. In particular, the authors establish a relation between the adjunct/argument asymmetry and the presence/absence of a null indefinite DP in a language. This makes the right predictions for both English and Greek (at least under their additional assumptions of pruning and vehicle change). However, there are some issues arising with respect to the mechanics of the operations assumed and some of the predictions their account makes.

2.3.1. A Critical Assessment of Pruning

Let us examine pruning again. This operation, as defined by G&M raises an interesting issue about their assumptions on ellipsis interpretability and recovery in LF. It has been independently argued (Sag, (1976), Williams (1987), Rooth (1992), Fox (2000)) that some type of parallelism must be met between the two clauses in order for ellipsis to be licensed:

- (16) Mary will buy a coat but John will not.
 a. Mary will [_{VP1}buy a coat], but John will not[_{VP2}<buy a coat>]
 b. # Mary will [_{VP1}buy a coat], but John will not[_{VP2}<sell a coat>]

(16b) is not an available interpretation for (16) since it does not meet the criterion of strict parallelism between the elided and the antecedent clause. In the same way, after the application of pruning (and sprouting), strict identity between the AC and the EC does not hold, since there is no parallel of the trace in IP₁ to IP₂. G&M acknowledge this issue, however, they do point out that in many cases the requirements for strict identity are weakened, like in (17):

- (17) John likes his brother and Mary does too
 a. John likes his brother and Mary likes her brother
 b. John likes his brother and Mary likes John's brother.

The above sentence is ambiguous. (17a) involves a statement about Mary's brother (sloppy interpretation), while (17b) expresses a statement about John's brother (strict identity). If we assume that strict identity must hold between the elided and the antecedent clause, the sloppy interpretation in (17a) cannot be accounted for. Sag (1976) and Williams (1987) circumvent this problem by assuming that the variable in the EC is not free, but it is bound by a λ -operator. Under this account, (17a) has in fact the LF representation in given in (18):

(18) $\text{John}_i \lambda x (x \text{ likes } x\text{'s mother}) \text{ and Mary}_j \lambda y (y \text{ likes } y\text{'s mother}).$

Since in both sentences there is identity in predication, parallelism holds and the sloppy interpretation is accounted for⁵. Although it is true that the antecedent and the elided clause may not be strictly identical, still, arguing for syntactic parallelism between a clause that has a bound variable and one that does not, like in the case of reverse sluicing, views parallelism in a fundamentally new way that is not analogous to the Sag and Williams analysis.

2.3.2. A Critical Assessment of G&M's Adaptation of Vehicle Change

With respect to Vehicle Change, it will be argued that the version of the operation that Giannakidou and Merchant adopt is quite different than the one originally proposed by Fiengo and May. This is exemplified in (19):

(19) Mary loves John_i and he_i thinks that Sally does too
 (19)' Mary [$_{\text{VP}_1}$ loves John_i] and he_i thinks that Sally [$_{\text{VP}_2}$ <loves John_i >]

In (19) we have a condition C violation, which is resolved through the application of vehicle change (i.e., *John* (which as an R-expression, is [-pronominal]) is interpreted as [+pronominal]). The same holds for the sentence in (15a) above. What is important is that in both cases the nominal that undergoes vehicle change is bound by some binder, (i.e., the pronoun *he*). In fact, if there is no external binder for that variable, this results to ungrammaticality as shown in the following example:

(20) * Who did Mary see and do **you** think that Sally did too?

⁵ An interesting prediction of this account is that the sloppy interpretation will not be available if the variable inside the EC is free and available to be bound by an external to the EC binder. Let us examine a sentence like "John said Mary hit him and Bill said she did too". This sentence, according to Sag (1976) cannot have the sloppy reading (i.e., that "Bill said she hit John"). This sentence differs from others in that the variable in the elided VP is not bound by the λ -operator; in fact, the sloppy interpretation would require it to be bound by an external binder (i.e., ...and Bill also $\lambda x. x$ said she did < $\lambda y. y$ hit x >). This kind of operation is not allowed (but see Takahashi and Fox (2005) for exceptions and an alternative approach) since the two clauses will not be semantically identical.

If we reexamine the sentence in (6a) which for convenience is repeated as (21), we can see that it does not involve a similar structure with that in (15) and (19):

- (21) It is not clear if [_{IP₂}<the police have arrested t_i] and [_{CP₁}who_i[_{IP₁} the police have arrested t_i]].

Let us for convenience assume that (21) above represents the Greek data. Should vehicle change apply, the unbound trace in IP₂ is interpreted as a pronominal element (i.e., **him**) and the structure is licit. However, there is no binder for this pronoun, contrary to what we have observed in the standard cases of vehicle change presented by Fiengo and May. In sum, G&M suggest a type of Vehicle Change that is conceptually different and stronger than the one Fiengo and May argued for and given the ungrammaticality of (20), empirically suspect.

Furthermore, just like the application of pruning, there are issues with respect to possible violation of the parallelism condition. It's not certain how syntactic parallelism can be established between the unbound variable present in IP₂ and the bound one (the wh-trace) present in the AC (IP₁). Finally, even if the pronominal variable in IP₂ is considered as bound, there seems to be no strict identity between a pronoun in the EC and a wh-trace in the IP₁.

2.3.3. Summary

Giannakidou and Merchant's account for reverse sluicing, although able to describe the major properties of reverse sluicing, it exploits special LF mechanisms that either are stipulative (like pruning) or go beyond what the evidence seems to allow (like Vehicle Change).

Finally, a question can be raised whether both of these mechanisms are necessary to account for the properties of reverse sluicing. We have seen that reverse sluicing with adjuncts is licensed through the application of pruning, while reverse sluicing with arguments is licensed through Vehicle Change (for languages for which such operation is licit, like Greek). If a unified analysis could be motivated, (i.e., one that assumes the same operations for both adjuncts and arguments), it would be preferable. Let us now formulate such a proposal.

3.0. An Alternative Analysis for Reverse Sluicing

In this section of the paper, an alternative analysis for reverse sluicing will be pursued which will not rely on special LF operations, like pruning and G&M's special version of vehicle change. However, we will maintain their key insight on the importance of the presence of null indefinite DPs in the language. Nevertheless, it will be argued that the way this property of the language is relevant to reverse sluicing is different.

In particular, we would like to argue that the asymmetry observed between arguments and adjuncts in reverse sluicing can be captured by making the following two assumptions: a) Existential quantifiers may or may not be associated with a phonetic matrix; English has phonetically null existentials only in **adjunct** position, while Greek allows them in **adjunct and argument**

position and b) Null quantifiers undergo Quantifier Raising (QR) and bind a variable in the position of the trace.

Let us now examine how these assumptions can be independently supported. With respect to our first hypothesis, the existence of null existential can be supported by the data presented below:

- (22) - Did you visit Mary at some point?
 - Yes, I visited Mary (at some point).
- (23) - Can I find this book somewhere?
 - Yes, you can find it (somewhere)! It's not a rare edition you know.

The examples above indicate that English does license phonetically null existential quantifiers in **adjunct** positions. However, as already shown earlier, null existentials in **argument** position are not permitted:

- (24) - Did John buy some books?
 - Yes, he bought *(some)

On the other hand, Greek allows phonetically null existentials in **both argument** (as shown in (9)) **and adjunct** positions:

- (25) - θa se $\delta\acute{u}me$ kápote
 will you-cl see-1pl sometime
 'Will we see you sometime?'
- Ne, θa me $\delta\acute{i}te$ (kápote)
 Yes, will me-cl see-2pl sometime
 'Yes, (sometime) you will see me.'

Our second assumption is an extension of what has been independently supported for overt quantifiers. In particular, following May (1985), Fox (2000) and Sauerland & von Stechow (2001) among others, we assume that quantifiers undergo covert movement and this can account for the scope ambiguity of (26):

- (26) A boy loves every girl
- a. [A boy] λx [every girl] λy [x loves y] 'There is a boy that loves every girl'
- b. [every girl] λy [a boy] λx [x loves y] 'For every girl, there is a boy such as he loves her'.

For (26) we need quantifier raising (QR) to account for both the surface interpretation (where *a boy* has scope over *every girl*) and the inverse interpretation where *every girl* has scope over *a boy*.

We want to argue that as a logical extension of the account above, phonetically null existential quantifiers undergo QR. Thus, assuming English

has null existential quantifiers in adjunct positions, the response in (22) will have the LF representation in (27):

(27) $[_{IP} \langle \text{sometime}_i \rangle [_{IP} I \text{ visited Mary } t_i]]$

The null existential quantifier in (27) undergoes raising and leaves a bound trace behind. Assuming that null quantifiers in adjunct positions are licit in English, (1) will have the structure in (28):

(28) It's not clear yet $[_{CP}[_{CP2} \text{ if } [_{IP2} \langle \text{sometime}_i \rangle [_{IP2} \text{ Mary bought the book } t_i]]]$
and $[_{CP1} \text{ when}_i [_{IP1} \langle \text{Mary bought the book } t_i \rangle]]]$

The sentence above has no unbound trace in the EC (IP_2). Therefore, the structure is predicted to be grammatical. Finally, the reader can observe that both IP_1 and IP_2 have syntactically identical and semantically parallel structures (both clauses contain bound variables, the elided a trace bound by the existential quantifier and the antecedent a trace bound by the *wh*-word.). Since English does not have phonetically null existentials in argument position, reverse sluicing with arguments cannot be licensed as there is no interpretation for IP_2 :

(29) *It is not clear $[_{CP}[_{CP2} \text{ if } [_{IP2} \langle \text{someone}_i \rangle [_{IP2} \text{ Mary hit } t_i]]]$ and $[_{CP1} \text{ who}_i [_{IP1} \text{ Mary hit } t_i]]]$

Since Greek allows null existential in adjunct and argument positions, the equivalent sentences of both (28) and (29) are grammatical.

3.1. Advantages of the Current Analysis

The analysis pursued in this paper presents certain advantages compared to the one proposed by Giannakidou and Merchant. First of all, it provides a unified account for the behavior of adjuncts and arguments in reverse sluicing for both languages. Instead of two distinct processes (pruning, vehicle change) there is only one (Quantifier Raising) that is independently supported. Also, the asymmetry between the behavior of arguments in English and Greek lies on the existence of null existential quantifiers, a generalization supported by cross-linguistic data, already pointed out by Giannakidou and Merchant (1998).

The application of QR ensures the preservation of structural identity between the antecedent and the elided clause as required according to standard assumptions on parallelism in ellipsis. There are no unbound traces in the elided IP and no need to evoke special LF operations. Thus, the data are accounted for with fewer stipulations. Finally, the above analysis may be extended to other elliptical phenomena, like sluicing, as we will see in the next section.

3.1.1. Sluicing Revisited

As already mentioned, in sluicing, a *wh*-phrase appears in the position where an embedded CP normally would and is taken as modifying some IP present in the

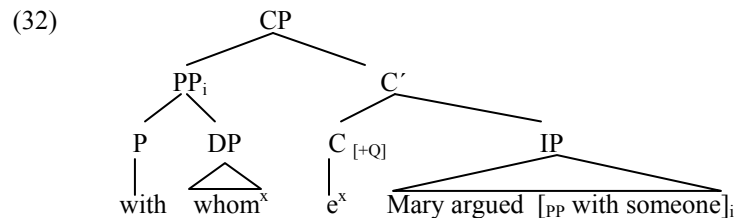
linguistic context. Let us now summarize the main points of Chung et al.'s (1995) analysis of sluicing.

For Chung et al., sluicing involves also a process of IP copying. Thus, the underlying LF representation of examples (4) and (5) above is provided in (30) and (31) correspondingly:

- (30) a. [IP₁Mary argued with someone], but I do not know [CP₂ with whom_i[IP₂<Mary argued with someone>]]
 ‘Mary argued with someone, but I do not know with whom M. argued’
- b. [IP₁ i María málose me kápjon] ala ðen kséro
 the M. argued-3sg with someone but not know-1sg
 [CP₂ me pjon_i [IP₂< i M. málose [CP₂ me kápjon>]]
 with whom the M. argued-3sg with someone
 ‘Maria argued with someone, but I do not know with whom M argued’
- (31) a. [IP₁He is leaving],but I do not know [CP₂when_i [IP₂< he is leaving>]]
 ‘He is leaving, but I do not know when he is leaving’
- b. [IP₁ févji], alá ðen kséro [CP₂ póte_i [IP₂< févji>]]
 leave-3sg_{PS} but not know when leave-3sg_{PS}
 ‘(S)he is leaving, but I do not know when (s)he is leaving’

In (30), we have sluicing with arguments, while in (31) we have sluicing with adjuncts. Like in reverse sluicing, the process of IP copy results in semantic uninterpretability at LF. In particular, in (30), *someone* does not qualify as an appropriate variable, while in (31) the wh-operator has no trace to bind.

In order to account for these problems, Chung et al., employ two structure modifying operations, sprouting and merger. As we have seen earlier, (cf. 13, 14 above) sprouting provides the missing **adjunct** trace in the elided clauses. The wh-operator now binds a trace and grammaticality is restored. However, since sprouting cannot alter argument structure, it cannot apply to the sentences we have sluicing with arguments; in these cases **merger** applies instead:



The schema in (32) focuses on the CP that contains the EC in (30a). Merger allows the restriction of the variable *e*, to be given by the combination of

the predicative content of the two overt phrases: the *wh* phrase and the PP inside the IP (the inner antecedent).

Just like in reverse sluicing, Chung et al.'s analysis of sluicing involves two special operations (sprouting for adjuncts and merger for arguments) which restore semantic interpretability at LF. Furthermore, the application of these mechanisms seems to violate a strict identity condition, between the EC and AC, i.e., there is no equivalent of the bound variable (which is either introduced by sprouting or by merger) in IP₂ of the antecedent clause.

Not surprisingly, should we extend our analysis of reverse sluicing to sluicing, these issues disappear. Let us examine again the English data of sluicing presented earlier under the two basic premises of our analysis made in the previous section:

- (33) [_{IP1} someone_i [_{IP1} Mary argued with t_i], but I do not know [_{CP2} whom_i [_{IP2} <Mary argued with t_i>]]⁶
 ‘Mary argued with someone, but I do not know with whom M. argued’
- (34) [_{IP1} <sometime_i> [_{IP1} he is leaving t_i], but I do not know [_{CP2} when_i [_{IP2} < he is leaving t_i>]]].
 ‘He is leaving, but I do not know when he is leaving’

Let us start with (34). Under the premise that English has phonetically null existential elements in adjunct positions, a null *sometime* is assumed to be present in the antecedent clause and has undergone QR. Both the elided and the antecedent clause have bound variables and thus sprouting is not required. Finally, strict identity between the AC and the EC now holds.

With respect to (33), the reader may recall that we have assumed English does not license null quantifiers in argument positions. Here lies the difference between the two sentences; the existential is phonetically realized in the first, while it's null in the latter. Nevertheless, our analysis will follow the same lines; the overt existential quantifier will undergo covert movement and will bind a variable. This variable has a syntactic and semantic correspondent in the antecedent clause (the *wh*-trace) and the condition on parallelism holds. Finally, just like with sprouting, there is no need to assume the operation of merger.

From the discussion of sluicing above, it is evident that the analysis of reverse sluicing pursued in this paper can be extended to other elliptical phenomena. Just like for reverse sluicing, it is possible to abolish the operation of special LF mechanisms (i.e., sprouting, merger)⁷ in sluicing as well. In this

⁶ Merchant (2000) showed that if preposition stranding is allowed in *wh*-questions in a language, it will also be licit in sluicing. We want to argue that the strict identity between the AC and the EC holds regardless of the grammaticality of preposition stranding. If there was no preposition stranding in (33), the LF representation of IP₁ would involve covert movement of the whole PP containing the indefinite and thus, strict identity would still hold.

⁷ This analysis does not rule out the application of special LF operations in general. For example, Fiengo and May (1994) provide very convincing arguments for the application

way, a unified account is provided not only within sluicing and reverse sluicing, but also across both phenomena.

4.0. Predictions; Issues for Further Research

Although the analysis pursued in this paper departs from that of Giannakidou and Merchant's, still, it adopts their key insight; there is a connection between the existence/absence of null indefinite DPs with the licensing or not of reverse sluicing with arguments in a language.

The examination of English and Greek data meets the prediction that if a language does not allow null indefinites in argument position, it will also ban reverse sluicing of arguments. What about the opposite, though? Does the existence of null existentials in argument position license arguments to be reverse-sluiced?

Let us examine the following data from Spanish:

- (35) - Has traído libros hoy?
 have-2Sg bought books today
 'Have you bought any books today?'
 - Si, he traído
 Yes have-1Sg bought
 'Yes, I have bought _'

As we can see in (35), Spanish behaves like Greek in (9), i.e., there is no object present, and a null indefinite DP can be assumed to occupy the object position. If this is the case, we should expect reverse sluicing with arguments to be licit in Spanish as it is in Greek. This prediction is not met:

- (36) a. * No sabemos aún si y quién capturó al ladrón
 Not know-1Pl yet if and who captured the thief
 'We don't know yet if and who captured the thief'
 b. No sabemos aún si y a quién arrestó la policía
 Not know-1Pl yet if and to who arrested the police
 'We do not know yet if and who the police arrested'

In (36) above, reverse sluicing of arguments is completely ungrammatical in Spanish, like in English. It would seem the language does not confront with the lines of the theoretical analysis pursued so far. However, this is not the whole picture, as it is exemplified in (37):

of Vehicle Change (especially in accounting for Condition C effects) strengthened by ample language data. What it is argued is only that if available, a simpler analysis which does not make reference to special language mechanisms should be preferable over a more complicated one.

- (37) a. ? No sabemos aún si y cuándo se fue John
 not know-1Pl yet if and when cli. went John
 ‘We don’t know if and when John left’
- b. ? El periodista no pudo saber si e porque fueron
 The journalist not could know if and why were
 enviadas las cartas
 sent the letters.
 ‘The journalist could not know if and why the letters were sent’

The examples in (37) show that the rate of acceptability of reverse sluicing with adjuncts in the Spanish varies. Perhaps, there is an independent property of the language that does not allow reverse sluicing in general. However, the partial acceptability of reverse sluicing structures with adjuncts contrasted to the total ungrammaticality of the equivalent argument structures does weaken the force of the prediction made and raises issues that have to be independently addressed. After all, sluicing in Spanish is allowed:

- (38) Ana habló con alguien pero no sé con quién
 A. spoke-1sg with someone but not know-1sg with whom
 ‘Ana spoke with someone but I don’t know with who’

(data from Merchant, 2001)

The Spanish data challenge both the analysis proposed by Giannakidou and Merchant as well as the current one and should be further explored.

Furthermore, the behavior of sentences with implicit arguments presents another possible problem for the analysis proposed in this paper :

- (39) John ate but I don’t know what

Since the implicit argument is licensed by the argument structure of the verb and has not been saturated yet, the sentence in (39) is accounted for under Chung et al.’s analysis, because sprouting will provide the missing argument trace. However, under the analysis pursued in this paper, if English does not allow null existential as arguments, (39) should be ungrammatical.

Interestingly though, English verbs with implicit arguments, behave like verbs in Greek in discourse:

- (40) - Did John eat something?
 - Yes, he ate (something)

However, there is a crucial difference between (40) and (9). In particular, there is a contrast in the meaning of the response to the question in (40), depending on whether an existential argument is present (i.e., the answer without the existential has the meaning that John satisfied his hunger) or not. In other words, in (40), the optional argument licensed by the verb does not behave like the

other null existentials. Future research has to properly address the relation between these implicit arguments and the bound variable in the elided clause.

5.0. Conclusions

Reverse sluicing and the asymmetry between arguments and adjuncts in English and Greek presents an interesting conundrum for a theory of ellipsis. The theoretical account proposed in the paper captures the properties of the phenomenon without invoking special LF operations. Furthermore, we examined the possibility of extending the analysis of reverse sluicing to other elliptical phenomena, like sluicing. It is true this analysis needs to be refined in order to address other cross linguistic data that do not seem to meet the predictions made. However, the prospect of providing a generalized account of sluicing and reverse sluicing is a desired goal.

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