Remarks on Oku's generalization

Anti-agreement and subject ellipsis in Spanish and Japanese[*]

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Abstract: I focus on the so-called Oku's generalization in order to show: (i) that a main division among at least two types of *pro*-drop languages is irreducible, i.e., radical vs. consistent *pro*-drop (*pace* Duguine 2013), and (ii) that the distinction can be understood in terms of two types of ellipsis, namely phrasal DP-ellipsis (Japanese) and head pronoun ellipsis (Spanish). Such a distinction follows from a general model for ellipsis within and across languages and does not have to be stipulated for the particular distribution of null subjects in Japanese and Spanish. Thus, the difference between radical and consistent *pro*-drop languages does not follow from the deep *vs.* surface anaphora distinction, but from the timing of ellipsis in each language. In addition, I conjecture that the lack of DP-ellipsis in Spanish, and consistent *pro*-drop languages in general, is due to the agreement-Case system. In this respect, my analysis is committed to the so-called *anti-agreement hypothesis*, according to which the availability of DP-ellipsis is connected to absence of morphological agreement. Finally, even when I dispense with the deep *vs.* surface distinction as a way of deriving Oku's generalization, I claim that null NP anaphora, a type of deep anaphora, is syntactically active at least in radical and partial *pro*-drop languages (Barbosa 2019).
Key words: pro-drop languages*,* Spanish, Japanese, Ellipsis, Agreement, Case

1. Introduction

Oku (1998) first observed that Spanish and Japanese differ in nontrivial ways as far as the interpretative properties of null subjects are concerned. Thus, while the null subject in the Japanese example in (1) is ambiguous between a strict and a sloppy reading, according to which either John thinks that Mary's proposal will be accepted or his(=John) own proposal will, the null subject in (2) only admits the strict reading, according to which the empty subject can only refer to María's proposal and not to John's:

Japanese: strict reading OK, sloppy reading OK

(1) a. Mary-wa   [zibun-no   teian-ga   saiyo-sare-ru-to]

         Mary-TOP   [self-GEN   proposal-NOM accept-PASS-PRES-COMP]

     omotteiru.

     think

     'Mary$_1$ thinks that her$_1$ proposal will be accepted.'

     b. John-mo   [*e*   saiyo-sare-ru-to]   omotteiru.

         John-also   [*e*   accept-PASS-PRES-COMP]   think

     Lit. 'John also think *e* will be accepted.'

Spanish: strict reading OK, sloppy reading *

(2) a. María cree   que   su   propuesta   será   aceptada.

         Maria believes   that her   proposal   be.FUT   accepted

     'Maria believes that her proposal will be accepted.'

     b. Juan   también   cree   que   *e*   será   aceptada.

         Juan   also   believes   that it   be.FUT   accepted

     'Juan also believes that it will be accepted.'

                                                                [Oku 1998: 165]

With the exception of Duguine (2013), many researchers draw a fundamental division between Japanese and consistent null subject languages of the Spanish type (see among others, Saito 2007, Şener & Takahashi 2010, Takahashi 2008a,b, 2013, 2014). Concretely, since argument ellipsis is not attested in Spanish, it should be the case that this language and consistent *pro*-drop languages in general, are not amenable to an ellipsis analysis but only to a *pro* one. Put more generally, it seems that the division between Japanese and Spanish can be derived under the well-known distinction between surface and deep anaphora (Hankamer & Sag 1976): whereas Japanese null subjects are instances of surface anaphora (i.e, ellipsis), Spanish makes use of deep anaphora in subject position (i.e., *pro*):

(3) a. Japanese: [$_{IP}$ ... <DP$_{Subject}$> ...] (<…> = elided material)

     b. Spanish: [$_{IP}$ ... *pro*$_{Subject}$ ...]

Tomioka (2003), in turn, famously proposed deriving the distribution of null arguments in Japanese through the postulation of an empty NP anaphora subjected to some semantic mechanisms that would give rise to different readings such an anaphora has. Recently, Barbosa (2019) extended Tomioka's analysis to partial *pro*-drop languages and, in addition, conjectured that the empty NP-anaphora analysis would generalize to consistent *pro*-drop languages like Spanish as well provided some additional assumptions regarding the referential nature of T. Even when Barbosa does not make any explicit claim regarding why Spanish does not have the relevant sloppy readings Japanese has, one could conjecture the following: Since according to her analysis Spanish T introduces a referential index which saturates the open predicate created by composition of the property anaphora (i.e., nP denotes in <e,t>) and the VP, a null subject construction in Spanish results in a sentence in which its subject is a free variable. Therefore, such a referential subject does not give rise to sloppy readings, at least not in the general case. If this analysis is on the right track, then the locus of the difference between the two languages mainly reduces to properties of the T node. Simplifying, the node T in Japanese does not introduce a referential index and, as a consequence, the nP anaphora in subject position is subjected to existential closure or type-shifting, giving rise to the varieties of readings bare (overt or covert) NPs have. In Spanish, the node T does introduce a referential index which establishes a dependency with the nP anaphora in the VP position. As a result of this formal link, the entire structure is read as containing a free variable in subject position.

(4)   a. Japanese: [$_{TP}$ ... nP$_{Subject}$ T ...]
         b. Spanish: [$_{TP}$ ... T$_{[D: index]}$ [$_{VP}$ nP$_{Subject}$ ...]]

At any rate, as Tomioka first pointed out, his analysis does not take any particular stance with respect to whether null anaphora are derived by ellipsis or not (see Tomioka 2003: 337). Indeed, the ellipsis status of NP-anaphora even in languages like English is a topic under debate (see Elbourne 2001, 2008, 2013). So, the analysis in (4) is still compatible with an ellipsis derivation for the subjects both in Spanish and Japanese. Indeed, more robust evidence in favor of a strict surface anaphora analysis comes from another ambiguity in Japanese. As noted by Takahashi (2014), Japanese null arguments can be ambiguous between a quantificational and an E-type reading:

(5) a. Sannin-no   mahootukai-ga   Taroo-ni   ai-ni   kita.

     three-GEN   wizard-NOM   Taroo-DAT   see-to   came

     'Three wizards came to see Taroo.'

   b. **[*e*]**   Hanako-ni-mo   ai-ni   kita.

        Hanako-DAT-also   see-to   came

     'lit. *e* came to see Hanako, too.'

[*e*] = the set of wizards are coincident (E-type reading).

[*e*] = the set of wizards can be divergent (quantificational reading)

<div align="right">[Takahashi 2014: 93]</div>

In principle, the quantificational reading in (5b) is not directly obtained by the operations which, according to Tomioka, are behind the distribution of null NP-anaphora, namely, existential closure and type-shifting. In effect, for the quantificational reading to obtain we need a semantic axiom operating not only on property anaphora but also on the cardinality of the relevant set. The existential and *iota* operators do not give us the desired result, at least not in an obvious way.[1] Instead, the relevant reading, as argued by Takahashi at length, is directly derived under the DP ellipsis analysis (<…> = deleted material):[2]

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[1] A solution would consist in treating numerals as predicates and not as, say, generalized quantifiers. If this is the case, then the semantic derivation would construct a complex predicate with the numeral as a predicate and existential closure would close the entire open formula. This option is indeed implemented in Giannakidou & Merchant (1997) for deriving similar readings in contexts of indefinite object drop in Greek. Alternatively, numerals can be treated as identity partial function introducing cardinality presuppositions. I am not able to evaluate whether these analyses for numerals as predicates or as partial identity functions would be independently supported.

[2] A more conclusive test to distinguish a deep from a surface anaphora analysis for Japanese would come from sub-extraction from elliptical arguments. As pointed out to me by Masaya Yoshida (p.c.), it is not easy to construct examples that diagnose extraction from elided arguments indubitably. So consider the following example:

(i)   A: Taroo-kara-no-tegami-ga kita-yo.
           T-from-GEN-letter-NOM   came
      'The letter from Taroo arrived.'
      B: Jiroo-kara-no-mo kita-yo.
           J-from-GEN-also came.
      'Also from Jiroo arrived.'   [Masaya Yoshida, p.c.]

Here, the problem is that we cannot know whether extraction takes place from an elided DP or from an elided NP, since Japanese also has NP-ellipsis (see Saab 2019 for extensive discussion on NP-ellipsis). A more informative example would involve an example of topic extraction, in which the remnant of the elliptical site does not show up in the genitive form but in a topic form:

(ii) A: Tokyo-kara-no   densha-ga kita-yo.
            Tokyo-from-GEN train-NOM came.
            'The train from Tokyo came.'
      B: Kyoto-kara-wa   (kita)?

(6) <Sannin-no mahootukai-ga> Hanako-ni-mo ai-ni kita.

  three-GEN wizard-NOM Hanako-DAT-also see-to came

  (Quantificational reading for (3b))

For the E-type reading, a null NP anaphora or other type of deep anaphora should be postulated in order to obtain the correct reading.

(7) e_{nP} Hanako-ni-mo ai-ni kita.

  Hanako-DAT-also see-to came

  (E-type reading for (3b))

So, in principle both the ellipsis and the null NP-anaphora strategy could be at play in the same language, in the same way as other types of deep and surface anaphora live together in the same language.[3]

In Spanish, as expected, the quantificational reading is impossible:

(8) a. Tres magos vinieron a ver a Juan.

  three wizards came to see DOM J.

  b. [*e*] Vinieron a ver a Pedro también.

  came to see DOM P. also

  (only E-type reading)

Thus, null subjects in Spanish behave (again) as English weak pronouns:

Kyoto-from-TOP came?
'Did the train from Kyoto arrive?'   [Masaya Yoshida, p.c.]

[3] Alternatively, we can get the two relevant readings through differences in the ellipsis size. Suppose, for instance, that Japanese projects a null D in the general case. Then, the E-type reading in (7) could be derived as a case of NP-ellipsis with a stranded D. As argued by Elbourne (2001), this will give rise to a definite description reading according to which we are talking about the salient set of three wizards. For the quantificational reading to obtain, DP-ellipsis applies in the same way as shown in (6). I am not particularly convinced about the arguments given by Elbourne in favor of a true ellipsis analysis for E-type anaphora in general, so I will assume a more conservative approach for E-type pronouns, according to which they are deep anaphora, as already proposed by Takahashi (2008a).

(9)   a. Three wizards came to see Taroo.

          b. They came to see Hanako, too.   (only E-type reading)

Even when I think that an analysis along the lines proposed by Barbosa can handle the basic patterns in Spanish, it does not handle in an obvious way the Japanese facts. Therefore, it seems that in principle a division within and across languages is needed with independence of the theory one favors. At least some of so-called radical *pro*-drop languages like Japanese seem to allow for a radical type of DP-ellipsis (i.e., argument ellipsis). As for consistent *pro*-drop languages, there is no evidence for argument ellipsis in subject position, so the language either makes use of *pro*, NP-anaphora or another type of ellipsis, depending on the many alternatives that can be found in the literature. In section 3, I will adopt a particular ellipsis approach to null subjects in Spanish which accounts for Oku's observation in a straightforward way.

This broad view on null arguments contrasts with Duguine's (2013) uniform analysis, according to which null subjects in Japanese and Spanish are uniformly derived as cases of phrasal ellipsis. It is important then to show that the division discussed here holds. In the next section, I discuss Duguine's approach and show that it cannot be sustained empirically. Then, I will briefly introduce my own view on null subjects for consistent null subject languages in order to defend the thesis that consistent null subjects in consistent *pro*-drop languages are also derived by ellipsis, but only restricted to pronouns (section 3). In section 4, I propose an account of the difference between radical and consistent *pro*-drop languages in terms of a version of the so-called *anti-agreement hypothesis*, according to which languages with rich agreement cannot have syntactic DP-ellipsis. Finally, I discuss Brazilian Portuguese, a language in which Oku's test gives rise to divergent results. The final picture is one in which null subjects across languages come in at least three guises: phrasal ellipsis (Japanese), pronominal ellipsis (Spanish) and NP-anaphora (Brazilian Portuguese, Japanese). In the concluding remarks, I leave open, at least as a theoretical option, the possibility for a third type of null argument, namely: *argument traces*. In effect, on the view to be defended here, traces are just the result of ellipsis, so at least in principle there is no reason to reject the thesis according to which some null subjects in hyper-raising contexts can be derived by movement as originally proposed in Ferreira (2000) and Rodrigues (2004) for Brazilian Portuguese.

2. A criticism to Duguine's uniform analysis

Duguine proposes a unified phrasal ellipsis theory of null subjects under which all cases of null subjects across languages are cases of phrasal ellipsis. Crucial to Duguine's analysis, of course, is the very nature of Oku's observation, because, if correct, her unified account would not be able to derive the attested patterns across languages. In other words, if all null subjects are elliptical DPs, then the absence of sloppy readings in Spanish for cases like (2) are not correctly ruled out in her system. This is the reason, I think, that leads Duguine to directly attack Oku's generalization. In effect, according to her this is a spurious observation. The point, she argues, is that adding an objective pronoun in the embedded clause in (2b) co-referential with the main subject makes the sloppy reading available (Duguine 2013: 442).

(10)	A:	María	cree	que [su	propuesta	le	será
		Maria	believes	that POSS	proposal	CL.3SG.DAT.	be.FUT
		aceptada	(a ella)].				
		accepted	to her				

Lit. 'Maria believes that her proposal will be accepted to her.'

	B:	Juan	también	cree	que [[*e*] le		será
		Juan	also	believes	that	CL.3SG.DAT	be.FUT
		aceptada	(a él)].				
		accepted	to him				

Lit. 'Juan also believes that [e] will be accepted to him.'

(*Sloppy reading OK*)

In view of this fact, she proposes a new generalization on sloppy readings for null subjects in Spanish:

(11)   **Generalization on the sloppy reading in Spanish:**
        Possessive pronouns embedded within elided DPs fail to give rise to a sloppy reading
        when they do not have a local antecedent.   [Duguine 2013: 441]

This observation does not seem to follow from any known constraint on sloppy readings in, for instance, well-known ellipsis contexts. Indeed, as Duguine acknowledges, the sloppy

reading in (2b) automatically reappears whenever the embedded clause is part of an elliptical TP (see Duguine 2013: 444, footnote 33). This fact is derived under the (rough) analysis in (12b) below, where *su propuesta*, which can be co-referential with the matrix subject, is not a null subject, but a full DP contained within the elliptical TP.

(12) a. María cree que su propuesta será aceptada.
Maria believes that her proposal be.FUT accepted
'Maria believes that her proposal will be accepted.'

b. Juan$_i$ también <[cree que **su$_i$** **propuesta/e** será
Juan also believes that his proposal be.FUT
aceptada]>.
accepted
'Juan too <believes that it will be accepted>.'

Therefore, (12b) has nothing intriguing; it is just a typical case of sloppy reading under ellipsis. It would be puzzling only if we accepted that Spanish null subjects are elliptical phrases, as Duguine proposes. Therefore, what seems to be suspicious is not Oku's observation but the generalization in (11). Let's see why. First, for my consultants, but apparently not for Duguine's, it is important to have some contrast between the object DPs in parentheses. Without this contrast, the sloppy reading is clearly disfavored and, even thus, speakers' reactions are quite unstable. Duguine's consultants, instead, prefer a null DP object at least in very similar examples (see Duguine 2013: 439, footnote 23). In any case, the judgments are not consistent among speakers. Second, and even more importantly, speakers' judgments are entirely consistent in cases like the following ones, which do not allow for sloppy readings even when they observe the condition in (11):

(13) A: Juan$_j$ cree que [su$_j$ novia]$_i$ lo$_j$ ama
J. believes that his girlfriend CL.ACC.MASC.SG loves
(a él$_j$).
ACC him
'Juan$_j$ believes that [his$_j$ girlfriend]$_i$ loves him$_j$.'
B: Pedro$_k$ también cree que [e]$_i$ lo$_k$ ama (a él$_k$).
P. also believes that [e] CL.ACC.MASC.SG loves (to him)

'Pedro_k also believes that she_i loves him_k.'

(14) A: Juan_j dice que [su_j madre]_i lo_j criticó (a él_j).
      J. says that his mother CL.ACC.MASC.SG criticized (to him)
'Juan_j says that [his_j mother]_i criticized him_j.'
      B: María_k también dice que **[e]_i** la_k criticó (a ella_k).
      M. also says that CL.ACC.FEM.SG criticized (to her)
'María_k also says that she_i criticized her_k.'

(15) a. A Juan_j le_j pegó [su_j madre]_i.
      to J. CL.DAT.3SG hit his mother
          '[His_j mother]_i hit Juan_j.'
      b. Pedro_k espera que **[e]_i** no le_k pegue a él_k.
      P. hopes that not CL.DAT.3SG hits to him
'Pedro_k hopes she_i does not hit him_k.'

(16) A: Juan_j cree que [su_j madre]_i le_j regaló un libro.
      J. believes that his mother CL.DAT.3SG gave a book
      'Juan_j believes that [his_j mother]_i gave him_j a book. '
      B: Pedro_k también cree que **[e]_i** le_k regaló un libro.
      P. also believes that CL.DAT.3SG gave a book
      'Pedro_k also believes that she_i gave him_k a book.'

((13)-(16): [*e*]= strict reading)

So far, it seems that Duguine's observation does not hold. However, there is still a set of data (those that pattern like the example in (10B)) that produces particular reactions in the speakers. But this, of course, does not lead us to generalize the worst case scenario, since it is well known that sloppy readings are also attested for deep anaphora (i.e., pronouns) under some particular conditions (see Merchant 2013 and the references therein). In effect, my own impression is that data like (10B) and similar ones suppose some type of pragmatic accommodation. The fact that some speakers react allowing a sloppy reading is due to the fact that the strict reading for those particular examples is at odds with our common sense that someone will accept John's proposal to Peter, although the relevant context can be

constructed. Recall that my informants prefer contrasting embedded objects, showing that we are talking about different alternatives for the variable in "*x*'s proposals". For those speakers who accept the sloppy reading when the embedded indirect objects are null, it seems that they have constructed a previous background according to which we were talking about different proposals (John's, Peter's and so on) to be accepted. Alternatively, we can think of this process as the reinterpretation of the null pronoun as a *pronoun of laziness*. If this is the case, the pronoun itself denotes a property anaphora which takes the antecedent NP as antecedent (e.g., simplifying, λ*x*. proposal(*x*)). Type-shifting then introduces the *iota* operator and the dative possessor binds the implicit possessor within the null argument (see Tomioka 2003 and Barbosa 2019).[4]

More robust data against Duguine's uniform analysis come from the additional observation made in the previous section that while null subjects in Japanese can be ambiguous between a quantificational and an E-type reading (see Takahashi 2008a,b and 2014), Spanish does not. I repeat here examples (5) and (8) for convenience:

(17) a. Sannin-no   mahootukai-ga   Taroo-ni   ai-ni kita.
          three-GEN   wizard-NOM   Taroo-DAT   see-to came
          'Three wizards came to see Taroo.'

    b. **[*e*]** Hanako-ni-mo   ai-ni kita.
              Hanako-DAT-also   see-to came
              'lit. *e* came to see Hanako, too.'

[*e*] = the set of wizards are coincident (E-type reading).

[*e*] = the set of wizards can be divergent (quantificational reading)

(18) a. Tres   magos   vinieron   a   ver   a   Juan.
          three   wizards   came   to   see   ACC   J.

    b. **[*e*]** Vinieron   a   ver   a   Pedro   también.
              came   to   see   ACC   P.   also

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[4] Tomioka introduces the possessor into the resolution of the variable. Then, iota type-shifting applies and gives rise to the correct reading. Alternatively, we can resolve the anaphora without the possessor variable and let iota operate over a mono-argumental predicate (i.e., ιx. Proposal(*x*)). In this case, the possessor dative would locally bind an implicit possessor within the null argument. Indeed, Spanish is a language that allows for binding of non-overt possessor like in *Juan levantó la mano* Lit. 'Juan raised the hand'. On this alternative, it seems that we need a more articulated structure for projecting the implicit argument anyway. At any rate, nothing depends on this particular alternative.

Therefore, Duguine's uniform analysis overgenerates quantificational readings in contexts where they are clearly impossible.

A final piece of evidence in favor of the distinction between phrasal DP ellipsis and head ellipsis (or pronoun ellipsis) comes from another consistent *pro*-drop language like Hungarian. Notice first that in examples like (19) only the strict reading is possible:[5]

(19) A: Mari azt hiszi, hogy eltört a lába.
Mari that.ACC believes that broke the foot.POSS3SG
'Mari believes her foot is broken.'

B: Péter is azt hiszi, hogy eltört.
Peter also that.ACC believes that broke
'Péter also believes her foot/*his foot is broken.' (only strict reading)

As for Takahashi's observation, notice now that only the E-reading is grammatical:

(20) A: Három varázsló meglátogatta Jánost.
three wizard visited.3SG János.ACC
'Three wizards visited János.'

B: Meglátogatták Pétert is.
visited.PL Péter.ACC too
'They visited Péter, too.'

As Anikó Lipták (p.c.) points out the conjugation on the verb in (20B) has to be plural. In (20A) it is singular, because the noun 'wizard' is singular (after numerals, Hungarian requires singular nouns). In (20B), however, singular agreement is impossible, because the reference is plural:

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[5] Thanks to Anikó Lipták for examples and discussion on Hungarian.

(21) *Meglátogatta   Pétert   is.

       visited.SG   Péter.ACC   too

       'He visited Péter, too.'

This pattern is compatible with the *pro* or other ellipsis analyses for consistent *pro*-drop languages, but not with Duguine's uniform analysis in terms of DP-ellipsis. Concretely, under a DP-ellipsis analysis, (21) should be grammatical with a singular verb because the elliptical subject is singular:

(22)   * <   Három   varázsló>   meglátogatta Pétert   is.

            three   wizard   visited.SG   Péter.ACC   too

I conclude then that a uniform analysis is not sustained by empirical evidence and that Oku's observation holds together with other empirical differences between radical and consistent *pro*-drop languages discussed above.

3. Surface anaphora all-the-way-down: an alternative to consistent *pro*-drop languages

I would like to briefly sketch now the proposal in Saab (2008, 2016) with the modifications in Saab (forthcoming). In broad terms, the theory I adopt pertains to a family of theories whose main thesis is that (at least some) null subjects are derived by ellipsis (Perlmutter 1971, Holmberg 2005, 2010a and Roberts 2010, among others). According to the particular version of this general approach I adopt here, ellipsis is an all-the-way phenomenon that consists of an operation which deletes the triggers for vocabulary insertion (as this operation is understood in Distributed Morphology). Depending on the component of the grammar in which ellipsis applies, it affects phrases (when it applies in the syntax) or heads (when it applies at PF). In Saab (forthcoming), I assume what Embick (2015) calls a *replacive* view on vocabulary insertion. On this view, phonological content is added to terminal nodes by replacing a variable, called Q, with the corresponding vocabulary item. If there is no Q feature in the terminal node, vocabulary insertion just does not apply. The model has the following general form:

(23)

Syntax: *Q*-deletion of phrases

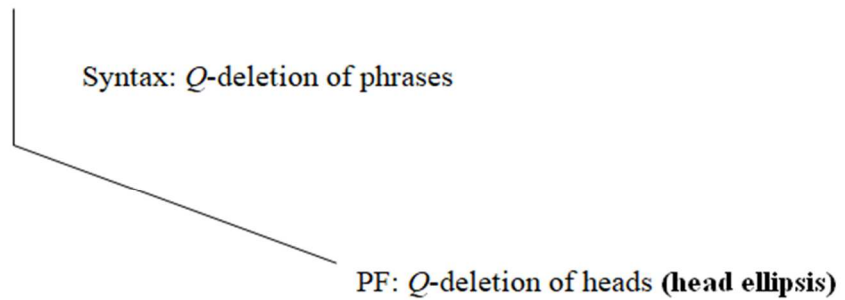PF: *Q*-deletion of heads (**head ellipsis**)

Figure 1: *Ellipsis all-the-way-down*

Head ellipsis, which is at the core of the present analysis, obeys morphological locality conditions. The operation is defined as follows:[6]

(24)   Head Ellipsis (under *Q*-deletion):

Given a morphosyntactic word MWd, delete every *Q*-feature contained in MWd if and only if:

(i) There is an identical antecedent contained in a morphosyntactic word MWd',

(ii) MWd is adjacent or immediately local to MWd'

Null subjects of the Spanish type instantiates a case of head ellipsis in the morphology under strict adjacency. In order to get the gist of the proposal, suppose then that null subjects are pronominal DPs that move to Spec,TP in the syntax. At PF, a dissociated morpheme is added to the T node on the basis of the inflectional information encoded in the subject DP. Once linearization takes place, the conditions for *Q*-deletion at PF are met and the pronominal subject is consequently deleted:[7]

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[6] Embick & Noyer (2001: 574):

(i) At the input to Morphology, a node X^0 is (by definition) a *morphosyntactic word* (MWd) iff X^0 is the highest segment of an X^0 not contained in another X^0.
(ii) A node X^0 is a *subword* (SWd) if X^0 is a terminal node and not an MWd.

[7] I am assuming that roots are mere indexes in the syntax. In the tree in (25), the number 3 stands for such an index.

(25)   Spanish null subjects as head ellipsis:

D[ɸ, <Q>]   *   T

T   Agr[ɸ, Q]

v   T[features, Q]

√[3, Q]   v[features, Q]
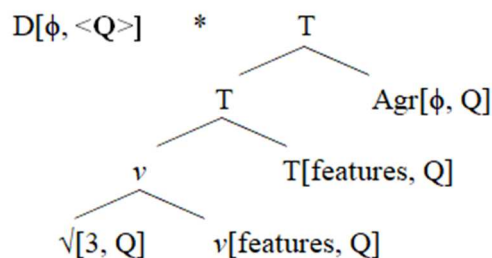
This analysis for consistent null subject languages automatically accounts for the fact that Spanish does not allow sloppy readings in examples like (2), repeated below:

(26) a.   María   cree   que   su   propuesta   será   aceptada.
           Maria   believes   that   her   proposal   be.FUT   accepted
      'Maria believes that her proposal will be accepted.'

      b.   Juan   también   cree   que   *e*   será   aceptada.
           Juan   also   believes   that   it   be.FUT   accepted
      'Juan also believes that it will be accepted.'

The only syntactic object that morphological agreement allows "eliding" is the ɸ-set on the D head of which agreement itself is a mere copy. But note now that a ɸ-set can only be a pronoun and nothing else. Thus, absence of sloppy readings in sentences like (2) follows without any further ado.

In sum, while Japanese argument drop is a case of phrasal ellipsis in the syntax, Spanish null subjects are derived by head ellipsis at PF. In this respect, the analysis makes no difference with the rough analysis in (3) according to which the distinction between Japanese and Spanish boils down to the distinction between surface and deep anaphora:

(27)   a. Japanese: [IP ... ~~DP~~Subject ...]
        b. Spanish: [IP ... *pro*Subject ...]

However, under closer inspection, it turns out that the basic facts are directly accounted for under the *Q*-deletion system with some beneficial consequences. In particular, the *Q*-deletion approach predicts that some "null" subjects in consistent null subject languages must be

pronounced for morphological well-formedness conditions. For instance, as shown in Saab (2008), subwords cannot be deleted if the MWd containing it is not deleted as well. This is called the *Subword Deletion Corollary*. Here is an informal formulation.

(28) **Subword deletion corollary (informal)**: Every terminal node contained in a non-elliptical MWd is subject to Vocabulary Insertion.

(A non-elliptical MWd is a MWd to which head ellipsis has not been applied.)

North Italian dialects, a variety of consistent null subject languages, confirm this point. Consider the case of Trentino, a language with free inversion of referential subjects but with some obligatory clitic subjects:

(29)   **Trentino**

    a.   *el*   Mario el magna.

           the   Mario he-eats

    b.   *el* magna.

           he-eats

    c.   *magna.

           eats
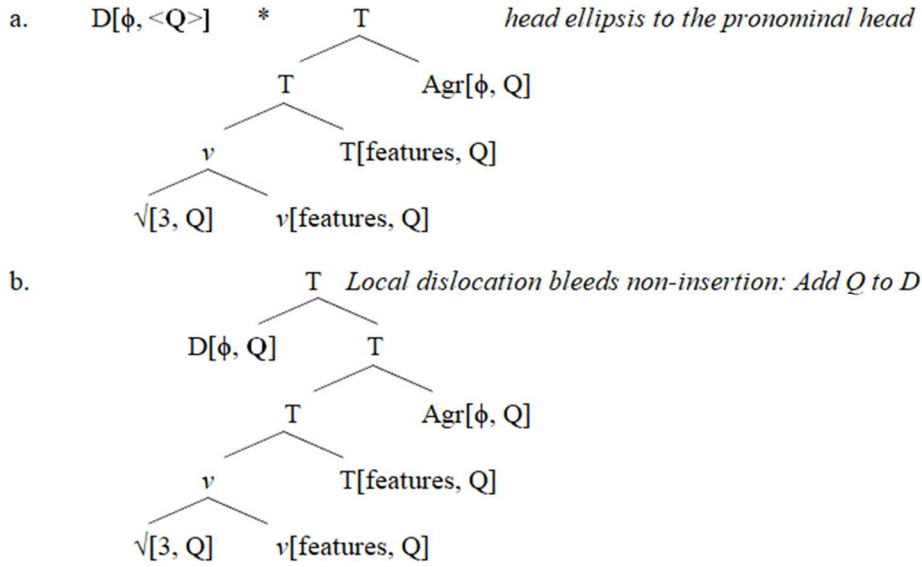
    d.   magna el   Mario.

           eats   the   Mario   [Safir 1986: 336]

Suppose that the clitic subject incorporates to T by Local Dislocation (LD) at PF. Then, the clitic becomes a subword of a non-elliptical MWd. In order to comply with (28), a *Q*-feature is added on D, but there are other possible implementations (ordering, syntactic incorporation, etc.):

(30)   Clitic subjects in Northern Italian Dialects: LD bleeds the effects of head ellipsis

a.   D[φ,<Q>]   *   T   *head ellipsis to the pronominal head*
                              T   Agr[φ, Q]
                         v   T[features, Q]
                    √[3, Q]   v[features, Q]

b.   T   *Local dislocation bleeds non-insertion: Add Q to D*
                    D[φ, Q]   T
                              T   Agr[φ, Q]
                         v   T[features, Q]
                    √[3, Q]   v[features, Q]

In summary, the different distribution of null subjects in Japanese and Spanish conforms to the typology of ellipsis proposed in this paper, according to which phrases and heads are deleted in the syntax and morphology, respectively.

(31)

Syntax/LF: Argument ellipsis XPs (Japanese)

PF: Null subjects Xs (Spanish)
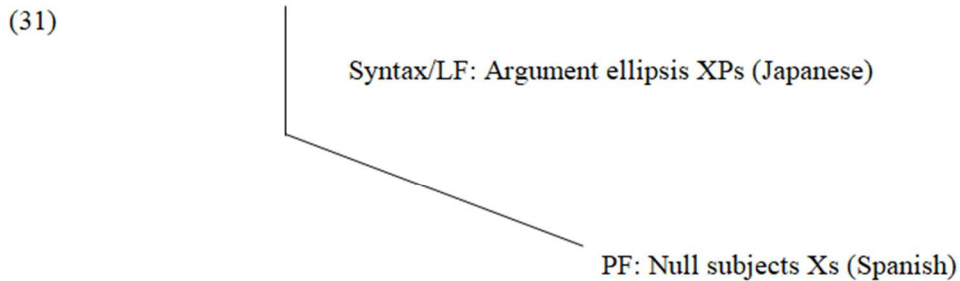
Figure 2: *Syntactic vs. morphological null arguments*

The obvious next question is why Spanish does not have DP ellipsis in the syntax of the Japanese type. This is the theme of the following section.

4. Anti-agreement revisited

The crucial fact to be accounted for under an ellipsis approach to null subjects is why argument ellipsis (i.e., ellipsis of full DPs) is not allowed in Spanish. I have already shown that the difference between radical and consistent *pro*-drop does not reduce to an ellipsis *vs.* a *pro* analysis; the minimal assumption we need is that, whereas Japanese and related languages

allow for DP-ellipsis in the syntax, Spanish only licenses ellipsis of φ-sets at PF (*modulo* other cases of topic-drop such as indefinite object drop and similar phenomena).

My implementation of Oku's observation follows the spirit of previous works framed under the so-called *anti-agreement hypothesis* that correlates absence or presence of agreement as a crucial ingredient of the theory of argument ellipsis (see, among many others, Saito 2007 and Takahashi 2014). The minimal assumptions we need for accounting for the basic patterns are listed below, some of which are rather uncontroversial:

(A)   There is a principle of recoverability.

(B)   Nominal arguments with phonetic content must have case (K) at PF (i.e., Case Filter)

(C)   Agreement is a PF phenomenon, as assumed in this paper (see also Bobaljik 2008, among others)

(D)   In Spanish, but not in Japanese, agreement is parasitic on K. This is the case either because Japanese lacks agreement (see Saito 2007 and references therein) or because it does have abstract agreement but it is not parasitic on K.

Assumptions (A) and (B) do not require further elaboration, as I assume they are fairly uncontroversial. The assumption in (C) has already been made in this paper, so it is mainly required by internal considerations. Other implementations in the spirit of my system could be done in a syntactic approach to agreement, but I will not follow this route of analysis here. Finally, the claim in (D) is at the heart of the contrast between radical and consistent *pro-drop*. It is by no way a novel assumption, as the reader can confirm by comparing previous work under the anti-agreement hypothesis (see, among others, Saito 2007, Şener & Takahashi 2010, Takahashi 2008a,b, 2013, 2014, and Miyagawa 2013). Put in a general way, my own view about this assumption is that there is no syntactic difference as far as the mechanism that assigns [nominative] in the syntax (or PF, see Bobaljik 2008) is concerned; the difference is that Spanish (and related languages) has a PF mechanism of agreement that adds a dissociated agreement morpheme on the basis of a K-marked DP. Simplifying the analysis, we can illustrate the difference between both languages as follows:

Japanese:

(32) $[_{TP} DP_{K[?]} T] \rightarrow DP_{K[nominative]}$ Syntax

Spanish:

(33) a. $[_{TP} DP_{K[?]} T] \rightarrow DP_{K[nominative]}$ Syntax

   b. $[_{TP} DP_{K[nominative]} T+Agr]$ Agreement at PF

Note now that even when assumption (B) is quite uncontroversial, it implicitly contains a corollary that has not been stressed in the literature on Case, namely, given minimalist assumptions, K is freely assigned to DPs, i.e., $DP_{(K)}$. Put differently, nothing goes wrong with a configuration like this as far as syntax is concerned:

(34) $[_{TP} DP T]$ Syntax

Of course, given the assumption in (B) such a configuration will produce a PF crash. We obtain then the following corollary:

(35) **Corollary**: Do not spell out (i.e., do not pronounce) a K-less DP.

This situation gives a legitimate result in the syntax/LF, provided that the principle of recoverability is satisfied (see assumption A). At PF, however, the result is divergent depending on the language: whereas the object (36b) is legitimate in Japanese, a language without morphological agreement, it is illegitimate in Spanish (37b), because by the assumption in D, the morpho-phonological properties of T cannot be satisfied at this level.

(36)   a. Syntax (OK):   TP   b. PF (OK): <DP> * T

                                             Japanese
                              DP   T'

(37)   a. Syntax (OK):   TP   b. PF (*): <DP> * T_{ϕ}

                                             Spanish
                              DP   T'

In the terms of this paper, we can assume that a K-less DP is subject to *Q*-deletion in the syntax. This is locally determined by the computational system: a K-less argument DP is automatically elided in the syntax by local inspection internal to the DP structure. Of course,

other alternatives are also conceivable. At any rate, what is worth noting now is that the direct prediction of this analysis is that argument ellipsis is ellipsis of a K-less argument. This prediction was already confirmed in the literature by Saito (2007), who also claims that null arguments in Japanese are caseless. He convincingly shows that this is indeed the case in Japanese on the basis of the well-known alternation between genitive and nominative subjects in this language (all data from Saito 2007):

(38) a. [Taroo-ga /-no itta]   tokoro
           T.-NOM/-GEN went   place
      'the place where Taroo went'
      b.   Taroo-ga /*-no   soko –e   itta
              T.-NOM/-GEN   there-to   went
              'Taroo went there.'

As Saito shows, the occurrence of an accusative argument in cases like (38a) prevents the occurrence of a genitive subject:

(39)   *[Taroo-no   *hon –o*   katta] mise
              T.-GEN   book-ACC   bought shop
       'the shop where Taroo bought a book'

Compare with the cases in (40), where no accusative argument is present:

(40)   a. [Taroo-no   kino   itta]   tokoro
               T.-GEN   yesterday   went   place
       'the place where Taroo went yesterday'
       b. [Taroo-no$_i$ t_i taihosareta] tokoro
               T.-GEN   arrested-was place
       'the place where Taroo was arrested'
       c. *[hon –o$_i$ Taroo-no t_i katta]   mise
               book-ACC   T.-GEN   bought   shop
       'the shop where Taroo bought a book'

Now, the contrast in (42) below clearly demonstrates that null objects in Japanese does not have accusative case, confirming the idea that elliptical argument in Japanese are caseless DPs:

Context:

(41) Ziroo-ga   hazimete   Nagoya-ni   kuru -node,   minna-ga

Z.-NOM   for the first time   N.-to   come-since   all -NOM

Iroirona   basyo-ni   *kare-o*   turete iku   yotei-desu

various   place –to   he -ACC   take   plan -is

'Since Ziroo is coming to Nagoya for the first time, the plan is for everyone to take him to various places.'

(42) a. *[Hanako-no   *kare-o*   turete iku]   tokoro-wa

H.-GEN   he -ACC   take   place -TOP

Nagoya-zyoo –desu.

Nagoya Castle-is

b. [Hanako-no   *pro*   turete iku]   tokoro-wa   Nagoya-zyoo –desu.

H.-GEN   *pro*   take   place -TOP   Nagoya- Castle-is

'the place that Hanako is taking him is the Nagoya Castle'

Thus, argument ellipsis is derived as case of phrasal *Q*-deletion of caseless DPs.

An immediate advantage of this approach is that it explains why the phenomenon is not attested in adjunct position. In effect, in a sentence like (43b) you cannot interpret that John did not wash a car carefully, but only that he washes a car:

(43) a.   Bill-wa   kuruma-o   teineini   aratta.

Bill-TOP   car-ACC   carefully   washed

'Bill washed a car carefully.'

b.   John-wa *e* arawanakatta

John-TOP washed.not

'lit. John didn't wash *e*.'

[Takahashi 2014: 94]

As far as I know, this is a very general pattern across languages. If the proposal I am making here is correct, then the ban of adjunct ellipsis follows because adjuncts simply do not have a structural K feature.[8]

Note now that the reasons that prevent DP-ellipsis in Spanish license the so-called *pro*-drop property: a pronoun induces agreement at PF and, precisely, by virtue of such an operation this pronoun can be subject to ϕ-deletion under formal identity. The trees in (44) illustrate the derivation of null subjects in Spanish in a simplified way ((44b) does not make reference to linearization only for expository convenience):

(44)   a.

Syntax/LF
  TP
 DP   T'
    …T…

b.   *PF*
  TP   *Spanish*
 <D> T'
    T Agr
Head ellipsis →   (D = Agr)
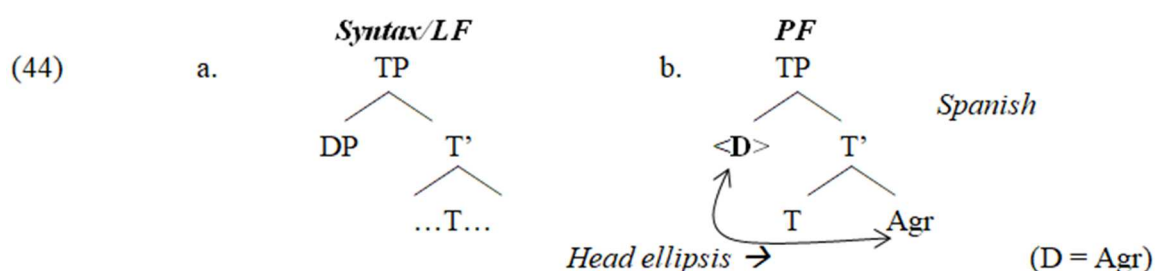
As observed above, agreement only licenses ϕ-deletion of pronominal entities (i.e., ϕ-sets) under identity. Crucially, phrases cannot be deleted under agreement. Hence, we derive Oku's observation in a theory that conceives of both types of null subjects in Spanish and Japanese as derived via ellipsis and that, at the same time, avoid all the problems mentioned in connection to Duguine's theory.

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[8] Takahashi (2014) conjectures that argument ellipsis must be licensed by some selecting head, which is the case with arguments but not with adjuncts. So the problem with adjuncts is not identification but licensing. However, this conjecture cannot be on the right track. Consider the English example in (i):

(i)   *John loves his son and Peters also loves.

Under the anti-agreement hypothesis, the ungrammaticality of (i) has to be connected to the fact that direct objects in English participate in agreement with *v* and consequently cannot be elided. Now consider (ii):

(ii)   A: The solution to John$_i$'s problems depends on his$_i$ son.
       B: *The solution to Peter$_k$'s problems also depends <on his$_{i/k}$ son>.

What accounts for the ungrammaticality of (iiB) now? I see no obvious solution for Takahashi's account of (41) because: (a) the prepositional complement in (ii) is obviously selected by the main verb and, (b) arguably, no agreement relation is at play here between the PP complement and little *v*. Of course, the fact that there is no agreement here can be demonstrated as false, but this would require strong empirical evidence. Under the analysis proposed here, instead, this follows just because prepositional complements of this type are not endowed with a K feature.

5. Partial *pro*-drop vs. radical *pro*-drop: Some speculations

Partial *pro*-drop languages of the BP type have two main properties, namely: (i) null generics and (ii) anaphoric third person null subjects in embedded position.

(45)   a.   Aqui   pode   fumar.

               here   can.3SG smoke

      'You/can smoke.'

       b.   Aqui   conserta   sapatos.

               here   repair.3SG   shoes

       'One repairs shoes.'   [Kato 1999: 5]

(46)   a. Ninguém   acha   que **[e]** é   estúpido.

       nobody   thinks   that   is   stupid

      'Nobody$_i$ thinks that he$_i$ is stupid.'

       b. O João disse   que   **[e]**   comprou   um   carro.

          the John said   that   bought+S3rd a   car.

        'John$_i$ said that he$_i$ has bought a car.'   [Kato 1999: 5]

(47) a. *O   João   disse   [que a   Maria acha   [que *e*   é   bonito]]

        the   J.   says   [that the   M.   believe [that *e*   is   pretty]]

      b. *A   mãe   do   João   acha   [que *e*   é   bonito]

        the mother of   J.   believes [that *e*   is   pretty]

                                    [Ferreira 2000: 20]

It seems then that Oku's observation cannot be tested in partial *pro*-drop languages. I have obtained however two types of reactions depending on the speaker, those that apparently behave as Spanish speakers (although see below) and those that react as Japanese ones.

(48) A: João disse que sua proposta será aceita.

          J. says that his proposal will-be accepted

    'J. says that his proposal will be accepted.'

      B: Pedro também disse que será aceita.

          P. also says that [e] will-be accepted

     'P. also says that it will be accepted.'

                                    [Strict reading Ok, sloppy reading: %]

Crucially, all the consulted speakers are partial *pro*-drop in the sense that they allow null generics in the relevant contexts (see the examples in (45)). There are various speculations to be done in this respect. First, it is important to stress at this point that, as observed by Kato (2011), null generics seem to be part of the core grammar acquired by BP children, but anaphoric null subjects are acquired late not as part of the acquisition process but because of schooling. But interestingly schooling does not convert speakers into consistent *pro*-drop ones, because there is no available mechanism such as head ellipsis in the core grammar to produce the correct output. At least two strategies seem to be available in general for non-*pro*-drop speakers: (i) empty NP-anaphora or (ii) phrasal DP ellipsis of the Japanese type. Depending on the language and other overlapping factors, the two strategies are indeed attested and have already proposed in the literature. The DP ellipsis analysis seems to be unavoidable in Japanese if we want to derive Oku's observation (and also Takahashi's one), but Chinese, instead, where sloppy readings are not attested in subject position (see (49) from Takahashi 2008a, 2014; see also Miyagawa 2013 and Barbosa 2019, among others, for discussion), could be a case in which only NP anaphora are available.

(49) a. Zhangsan shuo ziji de haizi xihuan Xiaohong.

          Zhangsan say self of child like Xiaohong

          'Zhangsan said his child liked Xiaohong.'

      b. Lisi shuo *e* xihuan Xiaoli.

          Lisi say like Xiaoli

          'lit. Lisi said *e* liked Xiaoli.'   (only strict reading)

Recall that Japanese also makes use of deep anaphora (say, null NP anaphora). This is how the language resolves the strict reading for cases like (1) which are similar to (49). Either

way, it seems to be implausible to claim that Chinese simply lacks of argument ellipsis in view of the fact that the strict/sloppy interpretation is attested in object position:

(50) a. Zhangsan bu xihuan guanyu ziji de yaoyan.

Zhangsan not like about self of rumor

'Zhangsan does not like rumors about himself.'

b. Lisi ye bu xihuan *e*.

Lisi also not like

Lit. 'Lisi does not like *e*, either.'

[Takahashi 2014, 105 *apud* Otani and Whitman 1991]

And the language also has the quantificational / E-type ambiguity in object position:

(51) Wo zhaodao-le liangben shu; ta ye zhaodao-le *e*.

I find-ASP two book he also find-ASP

Lit. 'I found two books; he also found *e*.'

[Takahashi 2014, 105 *apud* Li 2008]

Furthermore, and this is crucial, the language does not have morphological agreement, so in principle Chinese is an excellent candidate for argument ellipsis in general. It would be the case that the reason why it does not have DP ellipsis in subject position is connected to the topic nature of such a position. This is argued at length in Barbosa (2019), who elaborates on ideas by Sato (2012). Concretely, she claims that "the subject is a topic in Chinese and a topic must refer to an entity established in the discourse" (Barbosa 2019: 519). This claim is made under her general theory of *pro*-drop as null NP-anaphora, but in principle the claim is independent of such theory and compatible with the present one, according to which some null subjects are cases of DP-ellipsis.

Coming back to BP, given the reactions provided by my BP consultants, it seems that there is a split between those who react as Japanese speakers and those who react as Chinese ones. Although of course further research is needed in this respect, it is interesting to note that BP speakers do not seem to react as *pro*-drop speakers, i.e., they do not have head ellipsis of pronouns.

6. Concluding remarks

The final picture is illustrated in the following scheme:

(52)

Syntax: {Phrasal ellipsis, NP-anaphora}
(radical and partial *pro*-drop)

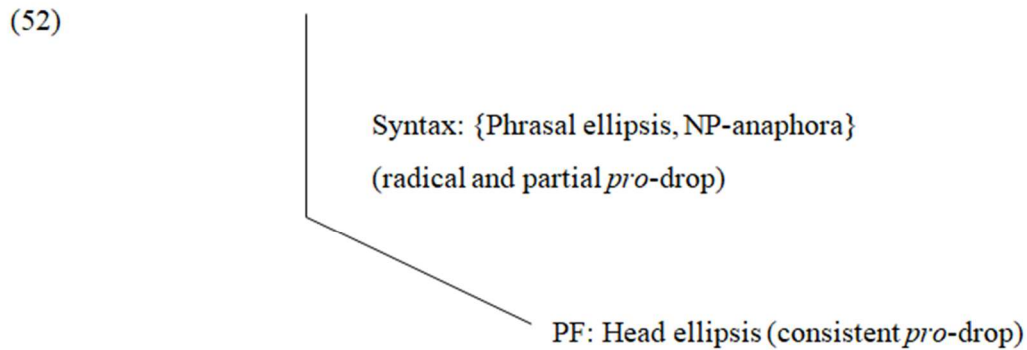PF: Head ellipsis (consistent *pro*-drop)

Figure 3: *Types of null arguments*

According to this model there are three types of null arguments: (i) elliptical pronouns, (ii) elliptical (full) DPs and (iii) NP anaphora. Consistent *pro*-drop languages are head ellipsis languages, i.e., languages in which pronouns are deleted at PF after morphological agreement. Radical *pro*-drop languages are languages in which arguments can be deleted by phrasal ellipsis in the syntax, but which also use null NP anaphora. Partial *pro*-drop, as argued at length by Barbosa (2019), can be reduced to the radical *pro*-drop type, although there are still many remaining issues; in particular, it has to be determined whether the language makes use of argument ellipsis.

Before concluding, I would like to stress a final point. In principle, I see no empirical or conceptual reason to reject cases of phrasal movement in hyper-raising contexts to account for some types of embedded null subjects in partial *pro*-drop languages, in consonance with proposals like those in Ferreira (2000) or in Rodrigues (2004). Indeed, I think that we can get a better understanding of null subject phenomena across languages if we accept that this strategy is in principle available for partial *pro*-drop languages. If this is the case, then some null subjects are traces, i.e., a particular type of elliptical object. Under closer inspection, it turns out that the types of null subjects attested in non-consistent *pro*-drop languages form a natural class connected with general properties of the agreement-case system of a given language. On the one hand, it should be the case that bare NPs (even ϕPs) fail to be pronounced because of the Case Filter (see Assumption B above): Case is a property of DPs. Of course, K-less DPs fail to be pronounced for the same reason. So empty NP anaphora and DP-ellipsis form a class of natural phenomena as far as their PF nature is concerned; the

difference between them boils down to the difference between deep and surface anaphora, respectively. In this way, we also capture the observation by Tomioka (2003), stressed and further elaborated by Barbosa (2019), that there is a correlation between the productive distribution of bare NPs in a given language and radical *pro*-drop. Given our assumptions between agreement and Case, the availability of the phenomenon should be allowed only in those languages in which there is no agreement at all or in which agreement and Case are not connected in the way stated by assumption (D). In sum, NP anaphora and DP-ellipsis are allowed to different extents in languages in which K is not a prerequisite for agreement to take place. Then, the extent to which a given language allows for DP-ellipsis or empty NP-anaphora (and different projections of empty Ns) or both should be explored in a case by case fashion.

Now, as mentioned, some part of the literature is also committed with the idea that certain anaphoric subjects both in finite and non-finite contexts are derived by A-movement. Roughly, under such an approach, a case of hyper-raising is analyzed in the following way:

(53) Os   meninos   parecem   que   <os   meninos>   gritam.
      the   children   seem.PL   that the   children   shout.PL
      'The children seem to shout.'

If the system I presented in section 3 is on track, then traces of arguments are just elliptical DPs: Movement is Copy plus *Q*-deletion to lower copies. Suppose that a DP with a K feature moves in order to value this feature. The minimal assumption is that the K feature is valued only for the copy in the landing position, but not for the lower one, which is, I think, the default hypothesis (see Nunes 2004 for extensive discussion). Now, a copy with an unvalued K feature fails to be pronounced by the Case filter. This is the simpler way in which a copy of a nominal argument is elided, because it only requires local inspection within the structure of the DP (see above). Once the system recognizes a DP copy with an unvalued K feature *Q*-deletion automatically applies. This way of copy deletion can now be extended to all copies with a K feature, regardless of valuation. In other words, copy deletion for a K-specified argument is deletion of its K feature. I think this is a natural conclusion if economy plays some role in the UG design, where local operation wins over non-local or less local ones. Again, this forces us to draw a fundamental division between arguments and adjuncts,

because for adjunct copies to be deleted we need a different mechanism, one that is not strictly local and, which as a minimum, requires searching an antecedent to delete the relevant copies. Therefore, we expect argument-adjunct asymmetries in the realm of copy deletion, similar to what we find in the realm of DP-ellipsis in Japanese, where adjuncts cannot be subject to ellipsis (see (43)). Such asymmetries are indeed well known and involve for instance relativized minimality effects:

(54) a. Qué   te   preguntás   quién compró <qué>?
          what CL.2P wonder.2P   who   bought <what>
      'What do you wonder who bought?'
      b. *Cuándo te   preguntás quién compró un   auto <cuándo>?
          when   CL.2P wonder.2P who   bought a   car   <when>
      'When do you wonder who bought a car?'

For the object copy to be deleted in (54a) an antecedent is not required because the K feature of the direct object copy is enough to induce *Q*-deletion. Such a possibility of course is not available with an adjunct copy which must be deleted through the localization of a local, c-commanding antecedent (i.e., the higher copy). Closeness plays a role here as in other cases of ellipsis. In the case at hand, a *wh*-element like *quién* blocks deletion of the adjunct copy. It seems then that we have empirical reasons to think of argument ellipsis and copy deletion as forming a natural class of phenomena.[9]

In sum, I leave open the possibility that null arguments in the syntax might be the result of three independent available mechanisms: (i) NP-anaphora, (ii) DP-ellipsis or, (iii) Copy Deletion. Strictly speaking, the first strategy goes from having a non-projected argument in the syntax to different sorts of NP projections. Different tests, like binding, should be constructed in order to show what level of projection a given NP anaphora has in a particular language. At any rate, this strategy reduces to a type of deep anaphora strategy. Instead, DP-ellipsis and Copy Deletion should be thought of a type of surface anaphora phenomenon. The distinction between both can be detected under usual tests of movement and ellipsis (island effects, for Copy Deletion, or occurrence across the discourse, for DP-ellipsis). Both

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[9] The connection between relativized minimality effects and case is not new: Kitahara (1999) also relates the contrast observed in (54) to Case theory, although his implementation is clearly different to the suggestion made here that the underlying reason that explains such a contrast is locality for phrasal ellipsis.

phenomena, however, display a similar behavior in other relevant domains. I have shown, for instance, that argument-adjunct asymmetries are attested for DP-ellipsis and Copy Deletion. In a broader perspective, then, different types of syntactically licensed null subjects boil down to the indubitable existence of deep and surface anaphora across languages. In this respect, again, a general theory of ellipsis seems to be superior to its competitors. A crucial novelty of this paper, however, is that null subjects of consistent *pro*-drop languages should not be confused with any of the syntactic strategies discussed here. In terms of the deep *vs.* surface anaphora distinction, these null subjects are surface anaphora of an underlying pronoun (i.e., deletion of a deep anaphora) and this phenomenon must be kept apart from NP-anaphora phenomena.

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