NULL SUBJECTS: A STATE-OF-THE-ART REVIEW
SUJEITOS NULOS: UMA REVISÃO DO ESTADO DA ARTE
SUJETOS NULOS: UNA REVISIÓN DEL ESTADO DEL ARTE

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ABSTRACT: This work points to the main studies about the syntax of null subjects and their correlated properties in natural languages within the minimalist program. To this end, we presented and discussed the four types of null subject languages which show the state of the art of the research within the minimalist program, namely: consistent null-subject languages; partial null-subject languages; radical null-subject languages; and expletive null-subject languages. Considering that Brazilian Portuguese and Finnish are partial null-subject languages, we compare the (as)symmetries in the syntax of null subjects between these languages, using approaches not yet widely discussed in the literature. Going beyond the morphology-syntax interface, we conclude that minimalist studies propose that the formal features (hence abstract) in the functional head T are crucial for the licensing and identification of null subjects, including in radical null-subject languages.
KEYWORDS: Null subjects. Morphology. Syntax. Semantics. Interfaces.

RESUMO: Este trabalho detalha os principais estudos sobre a sintaxe dos sujeitos nulos e suas propriedades correlatas nas línguas naturais dentro do programa minimalista. Para tanto, são apresentados e discutidos os quatro tipos de línguas de sujeito nulo que evidenciam o estado da arte das pesquisas empreendidas até então, nomeadamente: línguas consistentemente de sujeito nulo; línguas parcialmente de sujeito nulo; línguas de sujeito nulo radical (ou línguas de sujeito nulo orientadas para o discurso); e línguas de sujeito nulo expletivo. Considerando que o português brasileiro e o finlandês são línguas parcialmente de sujeito nulo, comparamos as (as)simetrias na sintaxe de sujeitos nulos entre essas línguas, com recortes ainda não debatidos amplamente na literatura. Indo além da interface morfologia-sintaxe, concluímos que os estudos minimalistas propõem que os traços formais (portanto, abstratos) no núcleo funcional T são cruciais para o licenciamento e a identificação de sujeitos nulos, inclusive nas línguas com orientação discursiva.
PALAVRAS-CHAVE: Sujeitos nulos. Morfologia. Sintaxe. Semântica. Interfaces.

RESUMEN: Este trabajo señala los principales estudios sobre la sintaxis de sujetos nulos y sus propiedades correlacionadas en las lenguas naturales basados en el programa minimalista. Para ello, se presentan y discuten los cuatro tipos de lenguas de sujeto nulo, que muestran el estado del arte de las investigaciones realizadas, a saber: lenguas de sujeto nulo propiamente dichas; lenguas parcialmente de sujeto nulo; lenguas de tópico nulo; y lenguas de sujeto expletivo nulo. Considerando que el portugués brasileño y el finlandés son lenguas parcialmente de sujeto nulo, comparamos las (as)simetrías en la sintaxis de los sujetos nulos entre estas lenguas, con recortes aún no ampliamente discutidos en la literatura. Más allá de la interface morfología-sintaxis, concluímos que los estudios minimalistas proponen que los rasgos formales (por lo tanto abstractos) en el núcleo funcional T son cruciales para licenciar e identificar los sujetos nulos, incluso en lenguas de tópico nulo.
PALABRAS CLAVE: Sujetos nulos. Morfologia. Sintaxis. Semántica. Interfaces.

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1 INTRODUCTION

Scholars seek to describe and explain the distribution of null subjects – phonologically non-realizable arguments – in terms of licensing and identification, dealing, especially, with licensing restrictions and the identification of those subjects by means of the valuation of φ-features – person, number, and gender. Along those lines, studies on the syntax of null subjects have been having a prominent role in Generative Grammar, primarily because they reveal much about the underlying structure of languages in the human mind and, secondarily, because they say a lot about the interfaces between syntax and morphology, and syntax and semantics.

In the postulation of the null-subject parameter, these two aspects stand in contrast: the *Extended Projection Principle* – EPP, which requires that, in all sentences, the subject position – that is, the Infl or T specifier position – is syntactically fulfilled by an NP/DP or a referential or expletive pronoun, such as in (1); and the empirical observation that certain languages omit the subject from their clauses, such as in (2).

(1) English
a. **John** will come.
b. **He** will come.
c. **It** is too late to come back.
d. **It** rained.

(2) Italian
a. *Giovanni verrà.* / 'Giovanni will come.'
b. *Verrà.* / '(He) will come.'
c. *È troppo tardi per tornare.* / '(It) is too late to come back.'
d. *È piovuto.* / '(It) rained.

Pioneering studies associate the possibility of omitting subjects in finite clauses in a language to a rich verbal morphology that distinguishes person and number (cf. PERLMUTTER, 1971; TARALDSEN, 1980): as such, the omission of the subject in (2b) takes place due to the possibility of recovering it through the verb morphology, which is not possible in the counterexample in (1b), which requires an overt subject. In this perspective, EPP on languages that allow for null subjects is, in a way, satisfied by formal features of agreement on verbs. In addition, those languages license null expletives, such as in the contrast on (1c-d)-(2c-2d) (cf. RIZZI, 1982, 1986; CAMACHO, 2013).

Beyond the matter of morphological wealth, Chomsky (1981) proposed that a set of specific grammatical properties can usually be found in languages with positive value for what he named the *pro-drop* parameter, namely: (i) the omission of the subject of the sentence (3a); (ii) the free inversion of the subject on simple clauses (3b); (iii) the long movement of the subject from an island *qu-* (3c) – we highlight that the island restrictions represent structural conditions by means of which the extraction/movement of certain elements does not derive grammatical sentences; (iv) the presence of an empty resumptive pronoun on embedded clauses (3d); and (v) the apparent violation of the *that-trace filter* – proposed by Chomsky and Lasnik (1977), according to which the subject is barred from moving over a lexically realized complementizer (3e).

(3) Italian (CHOMSKY, 1981, p. 240)

a. *Ho* *trovato* *il* *libro.*
have-1SG-AUX *find-PRF* *the* *book*
'I found the book.'
b. *Ha* *mangiato* *Giovanni.*
have.3SG-AUX *eat-PRF* *Giovanni*
'Giovanni ate.'
c. *L'uomo*$_i$ [*che* *mi* *domando* [*chi* t_i *abbia* *visto*]].[2]
The-man$_i$ *that* *me* *wonder.1SG* *who* t_i *haver-3SG-AUX* *see-PRF*
(With the interpretation: 'the man *x* such that I wonder who *x* saw').
d. *Ecco* *la* *ragazza*$_i$ [*che* *mi* *domando* [*chi* *crede*
Here *the* *girl* *who* *me* *wonder.1SG* *who* *think*
[*che* t_i *possa* *VP*]]].[3]
that t_i *may* *VP*
'This is the girl who I wonder who thinks that she may VP.'
e. *Chi*$_i$ *credi* [*che* t_i *partirà].*[4]
Who *think-2SG* [*that* t_i *leave-3SG-FUT]*
'Who do you think [(that) will leave]?'

Kayne (1980) was the first to show that languages that allow for subject omission, such as on (3a) also allow for the inversion of the subject-verb (SV) order, such as on (3b). Safir (1982), however, debunked this correlation between null subjects and free inversion by bringing into the debate evidence of two Italian dialects (Trentino and Modenese) where null subjects are not allowed by free inversion is. He exemplifies that clauses with inversion of the clitic subject in Trentino are restricted to matrix clauses (4) and to contexts where the clitic subject occupies the highest projection of the verb, such as on (6), which corroborates the author's theory that clitic subjects in clauses with inversions are agreement markers that appear on languages whose verb paradigm is weak.

(4) Free inversion in Trentino in comparison with French (SAFIR, 1982, p. 375)
a. *Ho domanda se (el Mario) el magna a casa*.
'I wondered if Mario eats at home'.
b. * *Ho domanda se (el Mario) magnelo a casa*.
c. * *Je m'ai demandé si Mari mange-t-il chez lui*.

(5) SV-order in Trentino in comparison with French (SAFIR, 1982, p. 375)
a. *Alo magna*?
b. *A-t-il mange*?
'Has he eaten'.

(6) Free inversion in Trentino in comparison with French (SAFIR, 1982, p. 375)
a. *La magnelo*?
b. *La mange-t-il*?
'Does he eat it(fem)?'

[2] English and French do not generate constructions as in (3c), since the long movement of the *qu-* element is ungrammatical in these languages, considering island constraints.
[3] As the null subject of *possa* in (3d) cannot be the result of movement according to locality constraints imposed by the subjacency principle, Chomsky (1981) proposes that it is generated in the base as a resumptive pronoun.
[4] Against Taraldsen's (1980) generalization that the semantic features of the null subject in cases of apparent violation of the *that-trace filter* are governed (if the subject is anaphoric) by the verb agreement morphology, Chomsky (1981) argues that the embedded sentence with null subject in (3e) does not violate the *that-trace filter*, since its *qu-* movement comes from a post-verbal position.

Safir (1982) also shows that clitic subjects in clauses with inversion in Trentino are not simultaneously licensed with their pre-verb form, such that (7a) can only be considered grammatical if the definite pronoun *el* is interpreted as a homophonous clitic object.

(7) Free inversion in Trentino in comparison with French (SAFIR, 1982, p. 375)
a. *El magnelo*?
b. **Il mange-t-il*?
'Does he eat?'

Rizzi (1982) proposed that, in cases of free inversion in null subject languages (NSLs), the empty subject position is co-indexed with the NP and is legitimized by INFL, as in (8).

(8) Derivation of the VS order in Italian (RIZZI, 1982, p. 132)
e_i $INFL_i$ [$_{VP}$ [$_{VP}$ *ha telefonato*] *Gianni*$_i$]
'e_i $INFL_i$ has telephoned Gianni$_i$'

Rizzi (1986) emphasizes the role of morphological richness when postulating the existence of *pro*, a phonologically null pronominal argument that can occupy the subject position in certain languages and which has the grammatical specification of the features of the X nucleus that licenses it co-indexed, such as illustrated in (9).

(9) *pro* in Rizzi (1986, p. 519-524)
a. Let X be the licensing head of an occurrence of *pro*: then *pro* has the grammatical specification of the features on X coindexed with it.
b. *pro* is governed by X_y^0;
c. *pro* is Case-marked by X_y^0.

The postulates in (9) predict that, in a given language, an inflectional nucleus can differ according to its ability to license and identify *pro*. According to Rizzi (1986), the **licensing operation** controls the syntactic conditions of the unrealized constituents, and the **identification operation** regulates the semantic content of the unrealized argument. Thus, the interpretation of *pro* as referential or non-referential is legitimized by how *pro* is identified, that is, through the formal features present in the agreement morphology in X_y^0. Rizzi (1986) states that *pro* can only be referential if it is licensed by an inflectional head that identifies person and number. For the other identification contexts, he argues that a quasi-argument *pro* is licensed by number, while an expletive *pro* is licensed by the absence of any marker of identification of person or number.
Once the existence of languages in which verb morphology has no role in the licensing and identification of null subjects is confirmed, such as in Chinese, C.-T. Huang (1984) deals exclusively with those languages and develops a fruitful analysis of null arguments based on two independently-motivated parameters: one distinguishes the languages with null topic from those with non-null topic; the other distinguishes *pro-drop* and non *pro-drop* ones. Thus, C.-T. Huang (1984) proposes the following typology: languages that do not have null topic nor null subject (English, French); languages that do not permit null topic but do permit null subject (Italian, Spanish); languages that license null topic and null subject (Japanese, Chinese); and languages that license null topic but do not license null subjects (German). For the author, in discourse-oriented languages, null subjects can be identified by context. Thus, it stands that an empty category can be bound to an NP in an A position or to a variable discursively bound to a null topic in the initial position of the sentence, that is, *pro* and null

topic have little in common: *pro* is subject to a syntactic principle that means it has to be co-indexed with Agr or an NP for its interpretation, while a null topic is subject to a principle of discourse and does not depend on morphology for its interpretation. This is the case of some Asian languages such as Chinese, for instance (10).

(10) Chinese (C.-T. HUANG, 1984, p. 533)

Speaker A:	*Zhangsan*	*kanjian*	*Lisi*	*le*	*ma?*
	Zhangsan	*see*	*Lisi*	*LE*	*Q*
	'Did Zhangsan see Lisi?'				
Speaker B:	a. *ta*	*kanjian*	*ta*	*le.*	
	he	*saw*	*he*	*LE*	
	'He saw him.'				
	b. ***e***	*kanjian*	*ta*	*le.*	
	[he]	*saw*	*he*	*LE*	
	'[He] saw him.'				
	c. *ta*	*kanjian*	***e***	*le.*	
	he	*saw*	*[he]*	*LE*	
	'He saw [him].'				
	d. ***e***	*kanjian*	***e***	*le.*	
	[he]	*saw*	*[he]*	*LE*	
	'(He) saw [him].'				
	e. *wo*	*cai*	[***e*** *kanjian* ***e*** *le*].		
	I	*guess*	*saw*	*LE*	
	'I guess [he] saw [him].'				
	f. *Zhangsan*	*shuo*	[***e*** *kanjian* ***e*** *le*].		
	Zhangsan	*said*	*saw*	*LE*	
	'Zhangsan said that [he] saw [him]'				

In (10), speaker B omits not just the subject in (10a), but also the object in (10b) and both in (10c) and (10d); (10e) shows that an entire subordinate clause can be omitted in Chinese. According to C.-T. Huang (1984), the empty subject in (10b) cannot be pronominal because a null pronoun must be identified following the *Principle of Recoverability*, according to which only redundant material can be erased from the material derivation and there is nothing in the sentence that can identify its content. (10b), however, can be a variable linked to a null topic. Thus, the sentence is grammatical with the empty category interpreted as a null topic. In (10c), the empty category cannot be pronominal, as, if it was, it would have to be co-indexed with the closest nominal element (*ta* 'he'), in violation of the *Condition of Disjoint Reference*, according to which a pronoun must be free in the head category (C.-T. HUANG, 1984). As a result, (10c) is grammatical only with the interpretation of null topic of the null object. (10d) is grammatical because both null arguments are variables bound to null topics. According to C.-T. Huang (1984), in all cases where the empty category is interpreted as a variable bound to a null topic, the binding relationship between the null topic and the variable can be obtained through a syntactic movement or co-indexing. He argues that all elements omitted in (10) are topics.

In order to deal with discourse-oriented NSLs and those with rich morphologies using only one formal model, Jaeggli and Safir (1989) have formulated the following hypothesis:

(11) The Null Subject Parameter (JAEGGLI; SAFIR, 1989, p. 29)
Null subjects are permitted in all and only languages with morphologically uniform inflectional paradigms.

(12) Morphological Uniformity (JAEGGLI; SAFIR, 1989, p. 30)
An inflectional paradigm **P** in a language **L** is morphologically uniform iff **P** has either only underived inflectional forms or only derived inflectional forms.

At first, Jaeggli and Safir's (1989) hypothesis seems to be in the right direction: languages will all inflectional forms derived, such as European Portuguese (EP) and Italian, license thematic null subjects the same way as languages with non-derived inflections, such as Chinese and Japanese. (11) and (12) also correctly predict that languages that are not morphologically uniform such as English and French do not permit null subjects. Jaeggli and Safir (1989) recognize, however, that the hypothesis on (12) does not live up to empirical data from Scandinavian languages such as Icelandic, which has five distinct inflectional paradigms but does not license thematic null subjects, only null expletives. We have gathered, here, that analyses on null subjects prior to the minimalist program follow two directions: on one hand, rich morphology is associated to licensing and the identification of null subjects; on another, discursive context is instead considered – Jaeggli and Safir (1989) represent, then, an attempt to redirect those two views toward a single path.
Holmberg (2005) points out that the first analyses about nulls subjects conflict with the theoretical premises of the minimalist program for checking theory, according to which the φ-features of the verb are not interpretable, and that is why they cannot have their content identified before valuation (CHOMSKY, 2000, 2001); this entails saying that the features of T have to be valued by *pro*, but this copying operation is incompatible with principles that regulate the way structures are built on minimalism, particularly the *Inclusiveness Condition*, which demands that the properties of a terminal node are retrievable in the lexicon and that the properties of a non-terminal node are retrievable in the structure it governs (CHOMSKY, 1995; NUNES, 1999). Copying information from T to *pro* violates the *Inclusiveness Condition*, as, if *pro* copied the φ-features of T, *pro* would acquire features of a node over which it does not govern. Over the next section, we deal with the syntax of null subjects starting with Roberts and Holmberg's (2010) typological proposal for NSLs within the minimalist program, namely: consistent NSLs; partial NSLs; radical NSLs (or discourse-oriented NSLs); and expletive NSLs.

2 NSLs IN THE MINIMALIST PROGRAM

Alexiadou and Anagnostopoulou (1998) – hence A&A (1998) – have proposed a theoretical formulation for the null subject parameter according to the minimalist program. They argue systematically against those who defend that the VS order results from the insertion of a special null pronoun – expletive *pro* – in a position prior to the verb. Their study focuses on NSLs – such as Modern Greek – that permit the VS order in all eventive (13) predicates and do not suffer restrictions for the interpretation of the definiteness in unaccusative constructions (14).

(13) Modern Greek (ALEXIADOU; ANAGNOSTOPOULOU, 1998, p. 495)
a. *Efige o Petros*. (unaccusative).
left Peter / 'Peter left.'
b. *Epekse o Petros*. (unergative).
played Peter / 'Peter played.'
c. *Ektise i Maria to spiti.* (transitive).
built Mary house / 'Mary built the house.'

(14) Modern Greek (ALEXIADOU; ANAGNOSTOPOULOU, 1998, p. 512)
a. *Eftase ena pedi*.
Arrived a child / 'A child arrived.'
b. *Eftase o Jorgos*.
Arrived the George / 'George arrived.'
c. *Eftase kathe filos mu*.
Arrived every friend mine / 'Every friend of mine arrived.'

The latter case is strong evidence against Chomsky's (1995) proposal that expletive *pro* in the SV(O) order only carries the categorial feature [D] on NSLs. For Chomsky (1995), the expletive carrying the categorial feature [D] associates to an NP complement. From the observation that Chomsky's (1995) proposal does not include data such as (14), A&A (1998) argue that there is no *pro* in pre-verbal position in the VS order on NSLs. For the authors, the agreement features of the finite verb in those languages are nominal enough to satisfy the EPP. This argumentation presupposes that: the agreement affixes are pronouns [+definite], have interpretable φ-features and assign structural Case; the subject is internal to the VP; and the movement of the verb toward the temporal functional head establishes the VS order and satisfies the EPP. In languages that do not permit null subjects, an XP element must occupy [SPEC-TP] to satisfy the EPP. For A&A (1998), since the movement of A into [SPEC-TP] is not necessary in NSLs, all movement into a pre-verbal position is an A-bar movement. This analysis explains the correlation between morphological richness and free inversion. Free inversion is a natural consequence of the fact that morphological agreement produces the property of null subject, satisfying the EPP via verb movement. According to this analysis, [SPEC-TP] is not projected in the declarative clauses with finite verbs and VS(O) order in NSLs.

An important implementation of A&A (1998) concerns the derivation of null subjects from clauses where the finite verb affixes have pronominal value. Defending a distinction between systems with strong and weak agreement, they argue that in the first system, the agreement affixes have independent lexical entries, such as pronominal elements, and have a categorial feature [D]. Thus, the root of the verb and the [+D] affix are independent from one another and separate in the numbering. Given that NSLs such as Modern Greek have strong agreement, there are two options for the affix [+D] in the course of derivation: first, to form a chain with the verb root in an initial derivation stage (in its internal domain), such that the verb will be projected and the complex resulting element of this chain will be merged into a larger structure – such is the case when there is movement from V-to T, and this movement satisfies the EPP. In another option, the affix [+D] can be linked directly into the temporal head, so the verb moves into this head - this would be the case of the clitic subjects in Italian dialects. In the weak agreement system, the agreement affixes are not independent from one another in derivation and do not have an independent categorial feature.

Holmberg (2005) makes the point that there are currently two avenues of analysis for null subjects that adhere to the minimalist program. The first supposes that *pro* can be (partially) eliminated from the analytical-theoretical apparatus for NSLs and that the verbal information contained in T is interpreted as subject – a definite referential pronoun, although it is phonologically expressed as an affix (cf. BARBOSA, 1995; ORDÓÑEZ, 1997; ALEXIADOU & ANAGNOSTOPOULOU, 1998; KATO, 1999; among many others). The alternative proposal is to presume that the null subject is specified by a complete set of φ-features and, therefore, values the non-interpretable φ-features of T and moves to [SPEC-TP]. This entails that the omission of the subject is a phonological matter: the null subject is a pronoun, or an NP/DP, which is not uttered (cf. HOLMBERG, 2005; among others). Beyond

the theoretical implementations, minimalist studies have typologically described four specific types of NSLs, about which we will dedicate the following subsections.

2.1 CONSISTENT NSLs

Whereas the agreement and movement of the verb are enough to satisfy the EPP for A&A (1998), this is not so for Holmberg (2005, 2010a). He defends a revision of the analyses about the null subject languages, arguing that not referentiality but rather definiteness (D) ought to be the property crucially adopted to characterize them. Holmberg (2010a) shows that, in NSLs, when a null pronoun in the 3rd person singular enters an agreement relationship with T, and T has a non-interpretable definiteness feature [*u*D], a sentence like (15) is generated.

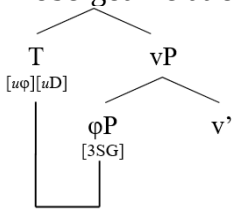
(15) Italian (HOLMBERG, 2010a, p. 88)
Verrà.
come-3SG-FUT
'He will come.'

Holmberg (2010a) interprets null subjects as a lesser pronominal structure than regular pronouns, formally φP. Thus, he postulates:

(16) Pronoun structure (HOLMBERG, 2010a, p. 94)
a. Pronouns are either DPs, with the structure [$_{DP}$ D [$_{φP}$ φ [$_{NP}$ N]]], or φPs;
b. Null pronouns are φPs.

Based on (16), he illustrates in (17) the relationship of when T probes a 3rd person singular φP and has its φ-features valued by this pronoun, generating a definite null pronoun.

(17) Probe-goal relationship between T and a φP (HOLMBERG, 2010a, p. 95)



According to Holmberg (2010a), in the derivation of 3rd person singular definite null subjects that are dependent on an antecedent in NSLs, there is an *Aboutness-shift topic* located in C, overt or null, mediating the co-indexing relationship between the null subject and its antecedent, which corresponds to the topic of a prior clause, such as (18):

(18) Italian (HOLMBERG, 2010a, p. 96)
a. *Questa mattina, Gianni ha visitato la mostra. Più tardi __ ha visitato l'università.*
This morning Gianni has visited the exhibition. Later __ visited the university
'This morning the exhibition was visited by Gianni. Later he visited the university.'
b. [CP <*Gianni*$_1$> [*questa mattina Gianni*$_1$ *ha visitato la mostra*]]
[CP <Ø$_2$> [*più tardi ha* φP$_2$ *visitato l'università*]] 1 = 2

The null pronoun in (18) is dependent on a topic. Holmberg (2010a) argues that the referential index of the null subject (Ø$_2$/φP$_2$) comes from the index of the DP phonologically expressed in the prior discourse (*Gianni*$_1$) by means of a chain of topics. As such, he explains that the

index sharing relationship between the null topic and the null subject in (18b) crucially involves T: the null topic values the [*u*D] feature of T, and the valuation consists on [*u*D] copying the referential index of the null topic. Those procedures can satisfy the EPP (19).

(19) Italian (HOLMBERG, 2010a, p. 105)

Ha	*comparto*	*una*	*macchina*	*nuova.*
has	*bought*	*a*	*car*	*new*

'(S/he) bought a new car.'

[$_{CP}$ < DP_1> [$_{TP}$ *ha* + T[$_{D1,\ 3SG,\ \cancel{EPP}}$] [$_{vP}$ <$\varphi P_{[3SG,\ NOM]}$> *comprato* ...]]]

As for 1st and 2nd person null subjects, Holmberg (2010a) adopts the hypothesis that each clause has semantic features representing the speaker and addressee in the domain of C. Thus, the speaker and addressee are always available as local antecedents.

Adopting Holmberg (2005, 2010a) and taking definiteness as a notion that involves existence and uniqueness, which, in order to be determine, demand that a defined element has a complete specification of person and number features, Roberts (2010) formulates the postulate in (20) regarding the D-feature and the specification of φ-features in consistent NSLs.

(20) If a category α has D[def], then all α's φ-features are specified.
(ROBERTS, 2010, p. 82)

Roberts (2010) defends that the suppression of a pronoun in derivation can only be possible when it identifies the T features. Thus, he stipulates that any language that has an uninterpretable D-feature in T and five or six distinct morphemes to recover grammatical persons permits null subjects. He proposes that null subjects in those languages are weak pronouns deleted in PF (*Phonetic Forms*) before moving to *Spell-out*. Thus, he assumes that null subjects are weak pronouns that must occupy [SPEC-TP], have a D-feature valued as definite and value the feature [*u*D] in T. Keeping in mind that T contains the φ-features that correspond to those of the subject in the probe-goal relationship between the subject and T, the subject is a defective goal, in the sense that its features are emptied by those present in the probe – defective goals are never realized in PF, independently of their probes. As it is a defective goal, the subject is deleted in PF via the *Chain Reduction* operation.

As a corollary of (20), a given language without a D-feature in T does not have its other φ-features specified, so that *pro*, being a weak pronoun, is not a defective goal and therefore cannot be null, cannot be deleted. Crucially, Roberts (2010) proposes that the deletion of the subject entails the projection of [SPEC-TP], such that the difference between consistent NSLs and the others lies in the composition of T: T bears nominal features which, in combination with their verbal specification, ensure that a weak pronoun projected in [SPEC-TP] constitutes a set of features of those present in T, thus justifying the omission of pronouns in terms of *Chain Reduction* – that is, of a process of deletion in PF, which consists in the exclusion of all identical copies in a dependence, except for the one in the highest chain.

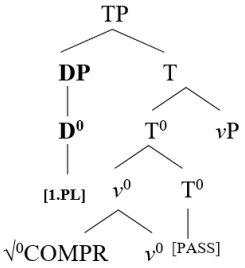
Saab (2016) puts forth an alternative approach to the idea that null subjects are elided instances of arguments manifest from the standpoint of an ellipsis being understood as an operation of blocking the insertion of lexicon in the derivation. Working with Distributed Morphology, he sustains the idea that the difference between an overt and a null pronoun is that the former has no [+I] and obtains content through rules of lexical insertion, while the latter has [+I], which blocks the application of those rules.

(21) Morphological I-Assignment (Head Ellipsis) (SAAB, 2016, p. 54)

Given a morphosyntactic word (MWd) Y^0, assign a [+I] feature to Y^0 if and only if there is a node X^0 identical to Y^0 contained in an MWd **adjacent** or **immediately local** to Y^0 (where the notion of *containment* is reflexive).

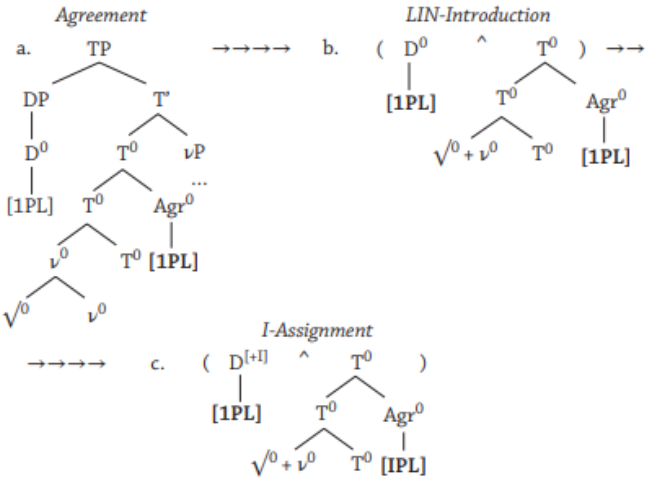
(21) predicts a set of interactions between syntax, nucleus ellipsis and other post-syntactical operations such as agreement and makes explicit a process of affixing morphemes in PF that instantiates null subjects, such as (22).

(22) Spanish: '*Compramos*.' (SAAB, 2016, p. 56)



In (22), a null subject is a maximum projection D in [SPEC-TP]. It is thus assumed that agreement is implemented in PF exclusively via the introduction of a dissociated morpheme, which is a copy of the formal features of the subject. Formally, Saab (2016) proposes that a synthetic structure such as (23a) is linearly ordered as (23b), and D can be valued by a [+I] feature. This feature is added to the elliptical heads under formal identity and blocks lexical insertion rules, generating a null subject.

(23)



(SAAB, 2016, p. 56)

Saab (2016) highlights that node D^0 is a morphosyntactic word, but the dissociated morpheme is not; this predicts that the subject can be elided but the dissociated morpheme cannot, such as in (24).

(24) Spanish (SAAB, 2016, p. 57)

a. ~~D(P)[1pl]~~ *compramos un libro.*

b. **Nosotros* *compra~~mos~~* *un* *libro.*
we *bought.1P.PL* *a* *book*
'We bought a book.'

Saab (2016), finally, conjectures that the introduction of dissociated morphemes – that is, morphological agreement – and the EPP – that is, the demand that T must be associated with a nominal feature or D in the syntax or in PF – are in complementary distribution.
In her most recent analysis, Barbosa (2019) assumes that T in consistent NSLs hosts an interpretable set of φ-features and thus she postulates that the thematic position of the subject will be filled by a phonologically null NP – formally, an *n*P, in the sense that this item consists minimally in a head of categorization *n*, that is, it corresponds to an *n* that does not merge with a root. Therefore, she proposes that the agreement head of a consistent NSLs behaves like a pronominal affix [+D], so that T is similar to a pronominal clitic, that is, it has a set of inherently valued features, very probably Case, and *pro* is a minimally specified nominal. Barbosa (2019) points out that one of the corollaries of this approach is the fact that referential pre-verbal subjects must be considered *Clitic Left Dislocated*. Thus, the avoid pronoun principle, which leads to the phonological non-realization of the subject when its full identification is possible (25b), reduces the optionality of overt subjects by not chaining a pronoun as a dislocated clitic to the left, unless it is necessary to signal a change of topic or emphasis.

(25) Portuguese (BARBOSA, 2019)

a. *O João disse que ele comprou um computador.*
The João said that he bought.3SG a computer
'John said that he bought a computer.'

b. *O João disse que __ comprou um computador.*
the João said that __ bought.3SG a computer
'John said that he bought a computer.'

Barbosa (2019) points that in (25b), in the PE, the null subject takes the matrix subject as antecedent; the pronoun in (25a), however, is preferably interpreted as non-coreferential. The opposite happens in Brazilian Portuguese (BP): (25a) and (25b) are available whenever the embedded subjects is coreferential to the subject of the matrix. According to the author, this observation regarding BP stands for other NSLs such as Finnish, which are characterized as partial NSLs.

2.2 PARTIAL NSLs

According to Holmberg (2010a), in an NSL without [*u*D] in T, the probe-goal relationship between a φP in the 3rd person singular and T does not provide a definiteness value, such that the result is a null indefinite pronoun whose interpretation has a [+ human] feature, as shown in (26).

(26) *European Portuguese/Brazilian Portuguese (HOLMBERG, 2010a, p. 92)

É assim que __ faz o doce.
is thus that __ _ __ makes the sweet
'This is how one makes the dessert.'

Thus, when a D-feature is absent from the set of T features in an NSL and a null 3rd person singular pronoun and T enter an *Agree* relationship, the null pronoun can only be interpreted indefinitely. Holmberg (2010a) classifies the NSLs that license an indefinite null 3rd person singular subject as partial NSLs. In this typology are Finnish and BP – whereas EP is a consistent NSL.

Holmberg (2010a) proposes that 3rd person singular definite null subjects in partial NSLs happen via the deletion of a pronoun controlled by a higher clause. This entails asserting that referential null pronouns in partial NSLs are licensed provided they are locally c-commanded by an antecedent, such as in (27a).

(27) a. Finnish (HOLMBERG, 2010a, p. 92)
Juha$_1$ *ei ole sanonut mitään, mutta Pauli*$_2$ *sanoo että* *$Ø_1$ *haluaa ostaa uuden auto*.
'Juha$_1$ hasn't said anything, but Pauli$_2$ says that he$_1$ wants to buy a new car.'
b. Italian
Gianni$_1$ *non ha detto niente, ma Paolo*$_2$ *ha detto che* $Ø_1$ *vuole comprare una macchina nuova*.
'Gianni$_1$ hasn't said anything, but Paolo$_2$ says that he$_{1/2}$ wants to buy a new car.'

According to Holmberg (2010a), in (27a): the null subject in the coordinate cannot be c-commanded by DP *Juha*, so the only possible antecedent is the DP *Pauli*. In Italian, the c-commanded is not a requirement when the antecedent is a topic, which makes it possible to interpret *Gianni* DP as a referent of the null subject of coordinate (27b).
Holmberg and Sheehan (2010) point out that partial NSLs present almost argumental null subjects with meteorological verbs, such as in "*Está chovendo*" ((It) is raining). Holmbert (2010a) and Holmberg and Sheehan (2010) point out that partial NSLs differ as to whether 1st and 2nd person pronouns can be null when used as indexicals, that is, when expressed as elements that depend on the speech context to establish their referents. In consistent NSLs, null indexicals are deficient pronouns, and referential interpretation is attributed by the D-feature in T. Holmberg (2010a) argues that a defined pronoun in partial NSL is not attached to T, and is therefore attracted to [SPEC-TP]. Thus, as T in partial NSL does not have the D-feature, a defined pronoun in [SPEC-TP] must have its own D-feature, that is, its own index. When probed by T, this pronoun will be forced by the EPP of T to merge once again, this time in TP. The uppermost copy in the chain must be uttered. (28) summarizes this analysis.

(28) Finnish (HOLMBERG, 2010a, p. 105)

Hän	*on*	*ostanut*	*uuden*	*auton*.
he	*has*	*bought*	*new*	*car*

'He bought a new car.'
[$_{TP}$ *Hän*$_{[D1, 3SG, NOM]}$ [T' *on*+T$_{[3SG, \text{~~EPP~~}]}$ [$_{vP}$ <*hän*$_{[D1, 3SG, NOM]}$ > *ostanut* ...]]]

In partial NSLs, there is no incorporation in T when a 3rd person singular pronoun has a defective and unvalued D-feature (labeled *u*DP), such that this pronoun is projected into [SPEC-TP], to satisfy the EPP and to be interpreted only when controlled by the argument of an upper clause, such as in (29a). (29b) is the derivation of (29a) before control, which will subsequently attribute index 1 to the unvalued null pronoun; that is, in (29b), the pronoun is null not by virtue of the incorporation in T, but in virtue of having a local antecedent from which results the defined interpretation of the subject.

(29) Finnish (HOLMBERG, 2010a, p. 102 and 105)

a. *Jari*	*sanoo*	*että*	_	*istuu*	*mukavasti*	*tässä.*
Jari	*says*	*that*	_	*sits*	*comfortably*	*here*

'Jari says that he sits comfortably here.'
≠ 'Jari says that one can sit comfortably here'.
b. *Jari*$_1$ ... [$_{CP}$ *että* [$_{TP}$ *u*DP [$_{T'}$ *istuu*+T$_{3SG, \text{~~EPP~~}}$ [$_{VP}$ <uDP$_{3SG}$> <*istuu*> *mukavasti tässä*]]]]

For Holmberg (2010a), the null indefinite 3rd person singular pronoun in Finnish must occupy [SPEC-*v*P] and, thus, it does not check the EPP, allowing other categories in the sentence to do so, like in (30).

(30) Finnish (HOLMBERG, 2010a, p. 102 and 105)
a. *Jari sanoo että tässä istuu mukavasti.*
Jari says that here sits comfortably
'Jari says that one can sit comfortably here.'
≠ 'Jari says that he sits comfortably here.'
b. [$_{CP}$ *että* [$_{TP}$ *tässä* [$_{T'}$ *istuu*+$T_{3SG,\ \cancel{EPP}}$ [$_{VP}$ φP_{3SG} <*istuu*> *mukavasti* <*tässä*>]]]]

In a study about the syntactic-semantic properties of the generic null pronoun in Finnish, Holmberg (2010b) observes that: it always has an inclusive reading (including speaker and addressee) and a feature [+human], that is, it is a null argument with the thematic role of agent; it does everything that overt pronouns do, however, it does not satisfy the EPP-feature in [SPEC-TP]; thus, an adverbial phrase (31b) or an overt expletive (31c) satisfy the EPP-feature, triggering, by incorporation, agreement with the 3rd person singular and attributing nominative Case to the constituent that occupies [SPEC-TP].

(31) Finlandês (HOLMBERG, 2010a, p. 210)
a. **Istuu mukavasti tässä.*
sits comfortably here
b. *Tässä istuu mukavasti.*
here sits comfortably
'One can sit comfortably here.'
c. *Sitä istuu mukavasti tässä.*
EXP sits comfortably here
'One can sit comfortably here.'

Comparing Finnish and BP, constructions with adverbial phrases and null generic pronouns in pre-verbal position are also found in BP.

(32) Brazilian Portuguese (RODRIGUES, 2004, p. 72 and 142)
a. *Nesse hotel pode entrar na piscina sem*
in.this hotel can-3SG enter-INF in.the swimming pool without
tirar a roupa.
take.off-INF the clothes
'In this hotel one can enter into the swimming pool without taking his/her clothes off.'
b. *Nesse hotel não pode entrar na piscina bêbado.*
In.this hotel not can-3SG enter-INF in.the swimming pool drunk
'In this hotel no one can enter the swimming pool drunk.'
c. *João me contou que na praia *(e_1) vende cachorro-quente.*
João me told that at.the beach sell-3SG dog hot
'João told me that hot dogs are sold at the beach.'
'João told me that he sells hot dogs at the beach'
d. *João me contou que e_1 vende cachorro-quente na praia.*
João me told that sell-3Sg dog hot at.the beach
'João told me that he sells hot dog at the beach.'
'João told me that hot dogs are sold at the beach.'

Rodrigues (2004) argues that the adverbial phrase in (32a) blocks the extraction of the embedded subject by the matrix subject, permitting the generic interpretation of the null subject. In (32b) – that is, in the absence of an element intervening between the embedded and the matrix –, the matrix subject c-commands the null subject. Modesto (2008) recognizes, in their turn, that, should an adverbial phrase occupy a dislocated position to the left, the interpretation for (33) will be ambiguous between definite and generic.

(33) Brazilian Portuguese (MODESTO, 2008, p. 400)

Na praia,	*o Feco*	*me falou*	*que*	*vende*	*cachorro-quente*.[5]
On.beach,	*the Feco*	*to-me said*	*that*	*sells*	*dog hot*

'Feco told me at the beach that he sells hot dogs.'
'Feco told me that hot dogs are sold at the beach.'

Silva (2000) verified that a null 3rd person singular subject with a generic reading in BP can also be licensed in an interrogative.

(34) Brazilian Portuguese (SILVA, 2000, p. 131)

Onde	*compra*	*cartão postal*	*aqui?*
where	*buys*	*postcards*	*by-here*

'Where can one buy postcards near here?'

Silva (2000) argues that the null subject in (34) would only be interpreted referentially if a sentential or discursive topic anchored its interpretation; in the absence of this topic, she argues that null 3rd person singular subjects in BP are interpreted as they were the impersonal-*se* clitic. Silva (2017) declares that generic null subjects in BP seem to be licensed under the "aspect shown by the present indicative or past imperfect, but crucially not by the past perfect" (SILVA, 2017, p. 196), seeing as this verb tense would act as an operator supposed to license the referential interpretation. This observation, however, is not valid. Lunguinho and Medeiros Júnior (2009) had already described that the perfect past acts as an operator that licenses the arbitrary (episodic) reading in BP, such as in (35).

(35) Brazilian Portuguese (LUNGUINHO; MEDEIROS JÚNIOR, 2009, p. 10)

a. *Matou um*	*rapaz*	*no*	*show do*	*Zezé*	*di*	
Killed a	*boy*	*at.the*	*show of.the*	*Zezé*	*di*	
Camargo	*e*	*Luciano*	*ontem.*			
Camargo	*and*	*Luciano*	*yesterday*			

'One killed a boy at Zezé di Camargo and Luciano's show yesterday'.

b. *Montou*	*o*	*armário*	*lá*	*em*	*casa*	*semana passada.*
Set.up	*the*	*closet*	*there*	*in*	*home*	*last week*

'Someone set up the closet at home last week.'

c. *Telefonou*	*aí*	*da*	*CEB*	*para*	*você.*
Thelephoned	*there*	*of.the*	*CEB*	*to*	*your*

'Someone called you from the power company.'

In BP, therefore, both the inclusive (32a-b) and the exclusive (35) – the one that excludes speaker and addressee – readings of generic null pronouns are possible. Generic null pronouns in BP, which also have [+ human] interpretation, are also licensed without the presence of a lexical item in pre-verbal position, such as in (34) and (35), and in (36) as follows.

[5] Ambiguity in structures like (33) can be restricted depending on the scope of the adverbial adjunct.

(36) Brazilian Portuguese

Capina,	*rastela,*	*limpa*	*quintais*	*e*	*bate*	*veneno*.[6]
weeds	*rakes*	*cleans*	*yards*	*and*	*applies*	*poison*

'One weeds, rakes, cleans yards, and applies herbicide.' (With the interpretation: someone *x* is offering their gardening services).

Differently from the Finnish, then, it is not mandatory in BP for an element such as an adverbial phrase, for instance, to occupy [SPEC-TP] on sentences with null generic subjects. Pilati, Naves and Salles (2017) argue, however, that those sentences must have a discursive adverbial anchor for them to be licensed in BP; so, in (35), this anchor is overt ("no show", "lá em casa", "aí da CEB"), and, in (36), it is pragmatically recovered, that is, it calls back to the place or the agent to which the information is associated through a proper exposition context. Crucially, the authors argue that the phonological realization of a lexical item in [SPEC-TP] is not mandatory in constructions with null generic subjects in BP, which, however, demand a discursive adverbial anchor to license them.

Holmberg (2010b) also describes an overt generic pronoun in Finnish, (*sä*), whose morphology of the pronoun and the verb is that of the 2nd person singular:

(37) Finnish (HOLMBERG, 2010b, p. 203)

Sä	*saat*	*töitä*	*jos*	*sä*	*puhut*	*saksaa*.
you.2SG	*get-2SG*	*work*	*if*	*you.2SG*	*speak-2SG*	*German*

'You get a job if you speak German.'

In BP, in its turn, there are two generic overt pronouns: one 2nd person singular (*você*) and one 1st person plural (*a gente*). Peculiarly, the agreement morphology for both is that of 3rd person singular.

(38) a. ***Ø*** *Não pode nadar aqui.*
Ø not can swim here.
'No one can swim here.'

b. ***A gente*** *não pode nadar aqui.*
we not can swim here
(Interpretation: 'No one can swim here.')

c. ***Você*** *não pode nadar aqui.*
You not can swim here
(Interpretation: 'No one can swim here.')

With or without overt pronoun, (38) presents an inclusive generic reading in BP. Peculiarly, as Naves and Borges (2014) have noted, through historic data, the exclusive (arbitrary) generic reading seems to hinder the insertion of lexical pronouns in the position of subject in BP:

(39) Nineteenth Brazilian Portuguese in Goiás

a. *Dia*	*15*	*depois*	*da*	*novena,*	*(*a gente/*você/??alguém)*	***levantou***	*o*
On	*15*	*after*	*of.the*	*novena*	*(*we/*you*/??someone)*	*raised*	*the*
mastro	*de*	*Nossa*	*Senhora*	*do*	*Carmo.*		
mast	*of*	*Our*	*Lady*	*of.the*	*Carmel*		

[6] Found on the back of a motorcycle parked in the municipal market in Jataí, Goiás.

‘On the 15th after the novena, one hoisted the Our Lady of Mount Carmel’s flag.’

b. *Dia*	*29,*	*eu,*	*Maria*	*e*	*Anica*	*fomos*	*ao*	*teatro,*
Day	*29*	*I*	*Maria*	*and*	*Anica*	*were*	*to.the*	*theater*
*(*a gente/*você/*alguém)*			***representava***		*Direito*	*por*	*linhas*	*tortas.*
*(*we/*you*/*someone)*			*represented*		*Law*	*by*	*crooked*	*lines*

‘On the 29th, Maria, Anica, and I went to the theater, they played ‘*Direito por linhas tortas*.’

(39) suggests that the arbitrary null subject licensed by the past perfect is semantically less marked for the person features related to the speaker and the addressee than the inclusive reading generic null subject, which has an existential reading and semantic person features that can reference generically both the speaker and the addressee. They are, therefore, distinct null subjects.

Still about the generic null pronouns in Finnish, Holmberg, Nayudu and Sheehan (2009) mention that a DP object can occupy [SPEC-TP] in constructions where they are licensed, such as (40).

(40) Finnish (HOLMBERG; NAYUDU; SHEEHAN, 2009, p. 63)

Nuorten	*mielipiteitä*	*kuuluu*	*arvostaa*.
youths	*opinions*	*should-PRS-3S*	*respect*

‘One should respect the views of young people.’

Peculiarly, we attest that a similar phenomenon happens in BP, with the difference that the fronted object triggers agreement with the verb (which does not happen in Finnish).

(41) Brazilian Portuguese

a. *Apartamento*	*vende*	*bem*	*em*	*Goiânia.*		
apartment	*sells*	*well*	*in*	*Goiânia*		
‘Apartments are quickly sold in Goiânia.’						
b. *A*	*cada*	*um*	*minuto*	*quatro*	*coisas*	*vendem.*
to	*every*	*one*	*minute*	*four*	*things*	*sell.*

‘Four things are sold every minute.’

Holmberg and Roberts (2013) recognize that rich morphology is not the only factor to be considered for the distinction (overt *versus* null) in the licensing of generic subjects in consistent and partial NSLs, after all, in Finnish, the verb paradigm is rich, with six finite verb forms for the indicative present (“to sing”: *laulan* (1SG), *laulat* (2SG), *laulaa* (3SG); *laulamme* (1PL), *laulatte* (2PL), *laulavat* (3PL)). With that, the authors affirm the hypothesis that the crucial difference between those languages is that T in consistent NSLs bears a definiteness component – [*u*D], an unvalued definiteness feature. This feature is absent in Finnish and in BP, independently of rich morphology. Holmberg and Roberts (2013) explain that the unspecified φ-features of T [*u*-φ] are valued by the null subject in consistent NSLs, but, in the absence of an unvalued definiteness feature in T [*u*D], the definiteness value of the subject cannot be copied by T. This means that this subject is not a copy of T, and therefore cannot be deleted. Thus, they suggest that a definite subject is only deleted in NSLs with morphological richness if there is [*u*D] in T. However, if a given language has morphological richness, but does not have [*u*D] in T, its definite subjects must be overt.

Holmberg and Roberts (2013) formulate the following postulate, relating null subjects, rich morphology, and generic null subjects.

(42) If a language has personal subject pro-drop in active, finite clauses, *and has subject agreement*, then it does not have generic subject pro drop in the same context, and vice versa. (HOLMBERG; ROBERTS, 2013, p. 121)

(42) provides that, if a language has generic null subjects in finite and active sentences, and it has a rich morphology, then this language does not have definite null subjects in the same context. We can make the point, then, that generic null pronouns are one of the definitional characteristics of partial NSLs. BP and Finnish (partial NSLs) have some (as)symmetries in this regard, as systematized on Chart 1.

Chart 1 – (As)symmetries between sentences with generic null subjects in BP and in Finnish.

PARTIAL NSLs:	**Reading of the generic null subject**	**Overt expletive of generic reading**	**Personal pronoun(s) of generic reading**	**Special categories in the subject position in sentences with generic reading**
FINNISH	– Finnish only has generic null subjects of inclusive reading (31b-c).	- As we saw in (31c), Finnish licenses an expletive pronoun (*sitä*) with inclusive generic reading	- Finnish has an overt 2nd person singular pronoun (*sä*), with corresponding verb morphology (37)	– Finish permits categories such as adverb clauses to occupy [SPEC-TP] in sentences with generic reading (31) – Finnish also permits a fronted object in [SPEC-TP] in those sentences that does not, however, establish agreement with the verb (40)
BRAZILIAN PORTUGUESE	– BP has generic null subjects with inclusive reading and exclusive (arbitrary) (35), with an apparent role for time morphology of distinguishing those readings (going against Holmberg, Nayudu, and Sheehan, 2009)	– BP does not have any kind of overt expletives	- BP has two lexical pronouns with inclusive generic readings: a 2nd person singular one (*você*) and a first-person plural one (*a gente*), both with verb morphology of 3rd person singular (38) - BP apparently does not license lexical pronouns in constructions with exclusive generic reading (arbitrary) (39)	– Much like Finnish, BP permits categories such as adverb phrases occupying [SPEC-TP] in constructions with generic null subject – BP also permits fronted objects in [SPEC-TP] in a generic reading sentence, with the difference that, in BP (unlike Finnish), the object establishes agreement with the verb (41)

Source: the author.

The way those special categories that occupy [SPEC-TP] in sentences with generic reading act the same way in BP and in Finnish is still an open question.[7]

[7] Barbosa (2019), building on Tomioka's (2003) generalization for radical NSLs, discussed on subsection 2.3, argues that null subjects in partial NSLs and also radical NSLs are instances of anaphora of a null NP. The researcher proposes that null subjects in those languages are an instantiation of the head *n* – a rootless

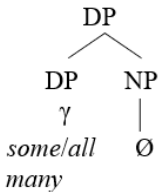
2.3 RADICAL NSLs

Radical null subject languages – Chinese, Japanese, Korean etc. – license null subjects without, however, displaying a grammar where verb morphology recovers any grammatical person. Tomioka (2003) associates null arguments (subject and objects) in those languages to their possibility of permitting robust bare NPs as arguments, proposing the following generalization.

(43) *Discourse Pro-Drop Generalization* (TOMIOKA, 2003, p. 336)
All languages which allow discourse pro-drop allow (robust) bare NP arguments.

According to the author, *pro* in radical NSLs is a null NP whose content is pragmatically recovered. He affirms that the same semantic tools used to interpret full NPs, such as in the structures in (44b) are used to interpret *pro* radical NSLs. He suggests that the foundation of radical NSLs is the fact that natural languages almost universally permit anaphoric bare NPs. He contends that there are two ways of deriving null arguments: under anaphora and under null NP ellipsis, such as in (44a) and (44b), respectively.

(44) a. b. (TOMIOKA, 2003, p. 336)



Tomioka (2003) defends that phonologically null arguments and NP ellipses have the same outcome in languages with NPs as arguments. The hypothesis, therefore, is that it is the same phenomenon: null pronouns in radical NSLs are the result of the ellipsis of an NP. The EPP in those languages demands an NP instead of a DP. If a functional head D is the position where φ-features, and therefore overt and null pronouns are linked, the absence of this head minimizes the condition that null subjects must be licensed by rich agreement.
Contrary to Tomioka (2003), Neeleman and Szendröi (2007) propose another generalization ruling null subjects on radical NSLs. They reject (43) on the following grounds: first, it is not clear why only D blocks *pro-drop* root, as several radical NSLs demand that certain functional heads be present in extended nominal projection – Japanese and Korean – whose NPs must be accompanied by a case particle, with very rare exceptions. According to them, if Tomioka (2003) is correct, null subjects in Japanese should only be licensed by the elision of NP, such as in (45a), where the NP is elided but a nominative case particle remains. The sentence is only grammatical if the particle is also elided (45b).

(45) Japanese (NEELEMAN; SZENDRÖI, 2007, p. 678)

a. **Ø-ga*	*subete-no*	*hon-o*	*yon-da*.
-NOM	*every-GEN*	*book-ACC*	*read-PASS*

---

categorizing head. She argues that generic null subjects from the Finnish do not elevate outside the verb head, whereas definite null subjects occupy an external position regarding the verb head. Thus, she proposes two configurations for the semantic component in Finnish: a) when [$_n$ Ø] remains on the inside of the verb head: indefinite interpretation; b) when [$_n$ Ø] raises itself to a preverbal position: definite interpretation. She points out that, in BP, in constructions such as '*Aqui vende fruta*', the *n*P is post-verbal and has an existential reading, that is, it is pragmatically restricted to a [+human] feature.

b. *Ø* *subete-no* *hon-o* *yon-da.*
every-GEN *book-ACC* *read-PASS*
'*pro* read every book.'

They believe that there are, in addition, languages that permit null subjects in the absence of agreement and demand that referential NPs are accompanied by determiners: in Cheke Holo, the subject can be null, even though no corresponding agreement marker appears in the verb (46a); on the other hand, Cheke Holo has determiners, even in proper nouns (46b).

(46) Cheke Holo (NEELEMAN; SZENDRÖI, 2007, p. 678)
a. *Wasi* *gu* *Ø* *pohe* *are.*
wash *EMPH* *clothes* *those*
'[She] washes the clothes.'
b. *Richard* **(na)* *e* *tusu* *mei* *radio* **(na)* *ka* *iara.*
Richard *ART* *PM* *hand.over* *come* *radio* *ART* *to* *me*
'Richard handed the radio to me.'

Neeleman and Szendröi (2007) postulate, however, that null subjects in radical NSLs are licensed by the morphology of pronouns. They assert that those subjects only occur in languages whose pronouns agglutinate Case, number, or another nominal feature. Thus, non-NSLs do not omit pronouns freely, even though they may present *pro-drop* agreement, and the other NSLs license null subjects under rich agreement.

(47) *Radical-Pro-Drop Generalization* (NEELEMAN; SZENDRÖI, 2007, p. 673)
Radical pro drop requires agglutinating morphology on pronouns

The authors maintain that radical NSLs can erase their pronouns if they have agglutinating pronominal morphology. In the absence of such morphology, *pro-drop* is blocked. The authors show that the Japanese case morphology is agglutinating: the pronominal root *kare* in (48) accompanies separate case morphemes (*-ga* and *-o*). As for Chinese, it has a plural marker *-men*, that binds to pronominal roots such as *ta*/'he' in (49).

(48) Japanese (NEELEMAN; SZENDRÖI, 2007, p. 679)
Kare-ga *kare-o* *settokusuru.*
he-NOM *he-ACC* *persuades*
'He persuades him.'

(49) Chinese (NEELEMAN; SZENDRÖI, 2007, p. 679)
Ta-men *kanjian* *ta* *le.*
he-PL *see* *he* *LE*
'They saw him.'

They explain that the correlation between pronoun morphology and null subjects in radical NSLs is derived from three independently motivated operations: first, the null arguments are taken as regular pronouns unuttered in PF, instead of instantiations of a special silent lexical item (*pro*) – thus, the difference between consistent and radical NSLs is that the former has an erasure operation that references the (pro)nominal properties of T. This kind of operation in radical NSLs is possible because, due to the absence of agreement, the issue with the copy operation does not exist. Second, *Spell-out* rules for pronouns can have non-terminal as well

as terminal nodes as goals. Finally, the competition between the different *Spell-out* is ruled by conditions such as the *Elsewhere Principle*.

Sato and Kim (2012) offer evidence from the Colloquial Singapore English (CSE), a language with a lexical foundation in English resulting from the contact with Sinitic languages – Mandarin, Cantonese etc. – as a counterexample to the generalization proposed by Neeleman and Szendröi (2007). They cite the absence of expletive pronouns as characteristic of CSE. Moreover, they show that CSE presents: null topic chain constructions; constructions with topics marked phonologically in the beginning of the sentence; null argument asymmetries in the position of subject and object. It is notable that this language conforms to the proposal by C.-T. Huang (1984) that a prominent topic language presents two essential properties: free omission of arguments and asymmetries in the reference of null arguments in the subject and object positions. The authors show, however, that, in cases where the verb agrees morphologically with the subject (specifically in the present tense of the 3rd person singular), null subjects are not permitted:

(50) Colloquial Singapore English (SATO; KIM, 2012, p. 868)
Speaker A: Zhangsan meets Xu all the time or not? (CSE)
'Does Zhangsan meet Xu all the time?'
Speaker B: a. ***e*** meets him all the time!
'[He] meets he all the time!'
b. He meets **e** all the time!
'He meets [him] all the time!'
c. ***e*** meets **e** all the time!
'[He] meets [him] all the time!'
d. *Lisi$_i$ say [**e**$_{i/j}$ meets him all the time!].
'Lisi$_i$ says [he]$_{i/j}$ meets him all the time!'
e. Lisi$_i$ say [he meets **e**$_{*i/j}$ all the time!].
'Lisi$_i$ says he meets [him]$_{*i/j}$ all the time!'

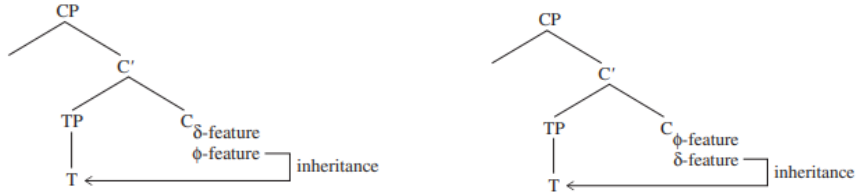
To deal with (50), the authors adopt Speas (2006), who affirms that the possibility of null arguments is blocked by *meager agreement*. Speas (2006) proposes that, when T has φ-features that lack complete specification, its features must be valued by the relationship specifier-head. Thus, as they do not have φ-feature, languages with meager agreement do not permit the insertion of an empty category in the subject position when an agreement feature is activated. On the other hand, when a language has rich agreement in T, which is totally specified, the language allows null subject. Lastly, when a language has no agreement, there is nothing that excludes an empty category in the subject position. Sato and Kim (2012) argue that meager agreement in CSE blocks the omission of the subject. Thus, they postulate that, in a radical NSL with optional meager agreement, the null subject is discarded in two situations: when its content is not recoverable by means of meager agreement and when it cannot provide the formal features necessary to establish meager agreement. On the other hand, a null topic is discarded not because its content cannot be recovered through meager agreement, but because it cannot provide the necessary φ-features to be valued through meager agreement,

Within the scope of his *Strong Uniformity* theory, according to which all languages share the same set of grammatical categories, and all languages openly manifest those categories[8], Miyagawa (2017) defends that languages with and without morphological agreement are generated by one sole system and are unified by a set of grammatical features that includes

[8] The theory of strong uniformity is based on Chomsky's *Uniformity Principle* (2001), according to which, in the absence of convincing evidence of the contrary, it is assumed that languages are uniform, with variability restricted to properties that are easily detected in utterances.

both φ- and δ-features – viz. configurational features of speech such as topic and focus. Miyagawa (2017) predicts two configurations for the inheritance of features of C by T from the φ- and the δ-features:

(51) Agreement-based languages Discourse-configurational languages



(MIYAGAWA; 2017, p. 4)

As a corollary, (51) provides four different kinds of languages: languages with φ-features in C and δ-features in T (Japanese); languages with δ-features in C and φ-features in T (English); languages with φ-features and δ-features in T (Spanish); and languages with φ-features and δ-features in C (Dinca). As for radical NSLs, the author develops an elegant analysis, casting a new outlook on the nature of null subjects in those languages. He suggests, for instance, that the null subjects in Chinese is a weak pronoun, and not the result of the ellipsis of the argument (as it is widely accepted in the literature). He states that the Chinese is a language with δ-features in C and φ-features in T and the subject *pro* in Chinese acts according to the φ-feature for internal reference in the sentence, but, when this is not the chosen option, it changes to δ-features when referring to a discourse entity. He also argues that the topicalization of the null subject in Chinese happens when he does not receive the φ-features from T, while the null subject in Romance languages is topicalized as part of the properties of agreement and movement of those languages. In Chinese, *pro* is limited to its reference potential: it refers to a discourse entity in very restricted contexts, and internally its antecedent is limited to the subject.

Miyagawa (2017) shows that, when *pro* refers to a discourse entity, the antecedent does not need to be a subject in Chinese. Thus, given that *pro* in (52b) is in a topic position, it is natural that it will seek a topic as its referent, such that the antecedent for *pro* in (52b) must be *Mali* from (52a), yielding a *sloppy* reading – something not usually expected in Chinese.

(52) Chinese (MIYAGAWA, 2017, p. 73)

a. *Mali, Zhangsan hen xihuan ta.*
Mary Zhangsan very like her
'Mary, Zhangsan likes her very much.'

b. *Danshi, Lisi shuo* [***pro*** *yijing jiehun le*].
but Lisi say already marry PRF
'But, Lisi said that [*pro* = Mary] is already married to someone.'

As for the *pro* subject in Chinese being a weak pronoun, Miyagawa (2018) provides as evidence the blocking for anaphor binding (53). He explains that the blocking of anaphora biding based on the idea that the long-distance linking of anaphors is implemented by the covered movement of the anaphor into the head whose specifier contains the subject of the clause, that is, a potential antecedent. This is based on the supposition that the anaphor is sub-specified for some feature, more precisely the person φ-features, and moves to a head whose specifier can provide the necessary feature to enable the anaphor to find the proper antecedent.

(53) Chinese (MIYAGAWA, 2018, p. 286)

a. *Lisi*$_{i}$ *juede* [*Zhangsan*$_{j}$ *dui ziji*$_{i/j}$ *mei xinxin*]

Lisi *think* *Zhangsan* *have* *self* *no* *confidence*
'Lisi think that Zhangsan has no confidence in self.'
b. *Lisi*$_{i}$ *juede* [*wo*/*ni*$_{j}$ *dui* *ziji*$_{*i/j}$ *mei* *xinxin*]
Lisi *think* *I/you* *have* *self* *no* *confidence*
'Lisi think that I/you have no confidence in self.'
c. *Wo*$_{i}$ *juede* [*ni*$_{j}$ *dui* *ziji*$_{*i/j}$ *mei* *xinxin*].
I *think* *you* *have* *self* *no* *confidence*
'I think that you have no confidence in self=you/*I.'
d. *Wo*$_{i}$ *juede* [*Zhangsan*$_{j}$ *dui* *ziji*$_{(*)i/j}$ *mei* *xinxin*]
I *think* *Zhangsan* *have* *self* *no* *confidence*
'I think that Zhangsan has no confidence in self.' self = Zhangsan/(*)I
e. *Nashi* *wo*$_{i}$ *juede* *Zhangsan*$_{j}$ *dui* *ziji*$_{i/j}$ *mei*
at that time *I* *think* *Zhangsan* *have* *self* *no*
xinxin *jiu* *fangqi* *le*
confidence, *then* *give up* *PERF*
'At that time, I think that Zhangsan had no confidence in self, so (I/he) gave up.'

According to Miyagawa (2018), the anaphor can be locally connected, or it can assume a relationship of long-distance linking with the subject of the highest clause. In (53b), the interpretation of long distance is blocked if the local subject is a pronoun with a semantic feature of participant of the 1st/2nd person. In (53c), the block by the local subject of 1st/2nd person is maintained even if the highest subject is of 1st/2nd person. In (53d), while the local 1st/2nd person subject triggers the block, a local 3rd person subject fails to do so for many native speakers, according to the author. In (53e), we see another example where a local 3rd person subject fails to trigger agreement. Miyagawa (2018) suggests that the block effect in (53) applies in Chinese due to some kind of person agreement system; thus, the absence of a block by a local 3rd person subject is equivalent to the dichotomy found in many languages between participant and non-participant agreement – while participant agreement has the full agreement features, non-participant agreement does not, so that, in effect, it is an unmarked agreement.

2.4 EXPLETIVE NSL

Dutch (54) and German (55) license expletive null subject, theoretically a weak pronoun, but do not license referential null subjects.

(54) Holandês
gisteren *werd* (**er*) *door* *het* *hele* *dorp* *gedanst.*
yesterday *were* *there* *by* *the* *whole* *town* *danced*
'Yesterday, there was dancing by the whole village.' (GILLIGAN, 1987, p. 80)

(55) Alemão
a. *Gestern* *wurde* (**es*) *getanzt.*
yesterday *was* (*it*) *danced*
'Yesterday there was dancing.'
b. *Gestern* *war* *(*es*) *geschlossen.*
yesterday *was* *(it)* *closed*
'Yesterday it was closed.' (CARDINALETTI, 1900, p. 5-6)

In German, the expletive *es* cannot be expressed (55a) while in the same syntactic position, but the referential *es* must be overt (55b). Y. Huang (2000) signals three behaviors related to expletive NSLs: (a) omitting just the non-argumental expletive, that is, expletives without a θ-role, so that the expletive of meteorological verbs must be phonologically realized (German, Dutch); (b) omitting non-argumental and quasi-argumental expletives, that is, meteorological verb expletives (Icelandic, Yiddish); and (c) omitting non-argumental, quasi-argumental, and, under restricted conditions, null referential pronouns (according to the author, Finnish, Hebrew, and Ukrainian).
The languages mentioned by Y. Huang (2000) in (c) cannot be considered a sub-type of the expletive NSLs. As we have seen, Finnish has restricted, systematic contexts that license null subjects. In this sense, Holmberg and Nikanne (2002) point out that the expletives *sitä* and *se* (the latter a nominative) are optional in Finnish (56), because there is in this language a topic position (FP) that licenses those subjects and whose EPP-feature is optional.

(56) Finnish (HOLMBERG; NIKANNE, 2002, p. 82)
a. *(Sitä)* *On* *ilmennyt* *ongelmia.*
EXP *have* *appeared* *problems*
b. *(Sitä)* *Sattui* *onnettomuus.*
EXP *occured* *(an)* *accident*
c. *(Sitä)* *Tuli* *kiire.*
EXP *came* *haste*
'We/they are in a hurry.'
d. *(Sitä)* *Sataa* *vettä.*
EXP *rains* *water*
e. *(Se)* *Oli* *hauskaa* *että* *tulit* *käymään.*
EXP *was* *nice* *that* *came-2SG* *visiting*
'It was nice that you came by.'

Biberauer (2010) presents an extensive study of the Icelandic and the German and follow's Rizzi's (1986) proposal that expletive NSLs are divided into: those that license quasi-argumental and non-argumental null expletives; and those that license non-argumental null expletives but do not license quasi-argumental null expletives. The researcher ascribes the variation in licensing null and overt expletives in Icelandic to a difference in the lexical inventories of those languages. This matter is illustrated as follows – The Icelandic licenses the quasi-argumental null expletive (57), but the German does not (58).

(57) Icelandic (BIBERAUER, 2010, p. 158)
I' gær *rigndi* *(*það)*
yesterday *rained* *it*
'Yesterday it rained.'

(58) German (BIBERAUER, 2010, p. 159)
a. *Es* *schneit* *heute*
it *snows* *today*
'It is snowing today.'
b. *Heute* *schneit* **(es)*
today *snows* *it*
'Today it is snowing.'

Biberauer (2010) states that German (58a-b) differs from Icelandic (57) by consistently demanding an overt expletive with meteorological verbs. She postulates that in Icelandic there is only the expletive *það*, which is linked to CP. Whereas in German there are two expletives: the quasi-argumental *es* (58a), which is an overt expletive bound to Spec-*v*P; and a true null expletive, such as in (55a). For her, neither language has an expletive bound in [SPEC-TP], and their true expletive, possibly only codifying person, is an expletive topic associated with CP due to the V2 properties of those languages.

3 FINAL REMARKS

In this work, we have presented a state-of-the art of the main minimalist studies about null subjects, considering the differences described between NSLs. We have seen that A&A (1998) argue in favor of verb inflection being taken as syntactic categories of clauses (viz., the subject), although they are realized as parts of a verb, and present Holmberg's (2005) proposal that the operation that yields 3rd person singular definite null subjects in consistent NSLs yields 3rd person indefinite null subjects in partial NSLs due to the fact that the D-feature is absence from the set of φ-features of T in partial NSLs. The studies conducted by Holmberg (2005, 2010a), Roberts (2010), Holmberg and Roberts (2013), and Barbosa (2019), going beyond the morphology-syntax dichotomy, connect a semantic feature, (D-feature), in TP to the licensing of definite null subjects in consistent NSLs. Holmberg (2005, 2010a) and Holmberg and Roberts (2013) also connect the absence of a D-feature to the licensing of indefinite null subjects of generic reading – inclusive or exclusive – in partial NSLs.
We also show that Miyagawa (2017, 2018) and Sato and Kim (2012) build on C.-T. Huang's (1984) postulate that the total absence of agreement features guides radical NSLs in a very distinctive manner. In this perspective, by means of the empirical data offered by the authors, we verify that the presence (even abstract) of agreement φ-features in T, as is the case of the 3rd person singular of CSE and as proposed by Miyagawa (2018) for Chinese, alters the licensing and identification of null subjects in radical NSLs. As such, we conclude that the formal features present in T have a crucial role for the licensing and identification of null subjects on NSLs: in partial and consistent NSLs, the presence or absence of a D-feature in T, associated with φ-features, has a prominent role; in radical NSLs, the presence of φ-features in T alters the licensing and identification of null subjects; and, finally, in the so-called expletive NSLs, true expletive pronouns do not bind to T, as, in fact, they are bound to C properties in those languages – usually V2 languages.

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