
This is the **published version** of the bachelor thesis:

Torrent Pulgarin, Adam; Tubau Muntaña, Susagna , dir. The Head-Parameter and the Null-Subject Parameter Revisited. Bellaterra: Universitat Autònoma de Barcelona, 2022. 22 pag. (1482 Grau en Estudis Anglesos)

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**DEPARTAMENT DE FILOGIA ANGLES I
DE GERMANÍSTICA**

**The Head-Parameter and the Null-Subject
Parameter Revisited.**

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June 2022

ACKNOWLEDGEMENTS

I want to thank my mother Esther, my grandmother Encarnacion, my friends Iker, Carlos and Manel for their support and care. I want to also thank my supervisor for her vast array of ideas when discussing the aims of this paper.

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ABSTRACT

Principles and Parameters are concepts from Chomsky's UG theory. Principles establish similarities between languages, while Parameters establish the differences and usually come in a binary setting. This means that if the parameter is active, the language cannot have the characteristics as if it were deactivated. The Null-Subject Parameter and the Head-Parameter are two of the most researched parameters in generative linguistics. The Null-Subject Parameter establishes which languages can have subjectless sentences. Spanish and Catalan are good examples of this parameter being active, while English and French are examples of the parameter being inactive. The Head-Parameter regulates the linear order of the head and its complements. Languages can either be head-initial, like English, or head-final, like Japanese. Criticism of The Head-Parameter has put into question its necessity as a parameter. On the other hand, The Null-Subject Parameter has not received such attention, but the way it works as a parameter has, switching from a binary setting to a three-way setting. The following paper will revise the function of these parameters, review the criticism, and see if the arguments against the Head-Parameter could be applied to the Null-Subject Parameter.

Key words: Principles and Parameters, Head Parameter, Null-Subject Parameter, pro-drop languages, validity, criticism, Antisymmetry, Kayne.

1. INTRODUCTION

Principles and Parameters (P&P) are a set of language rules formulated by Chomsky in 1982. They depicted the systematic similarities and differences languages shared among each other. Focusing on the latter, a vast array of binary parameters would exemplify all discrepancies from one language to another. The object of study of the following paper would be two of these parameters. First, the Null-Subject parameter, which is one of the most popular and researched ones. The setting of this parameter determines whether a sentence can work with or without a subject. Languages like Spanish or Catalan are perfect examples of this parameter switched on. On the other hand, English would be a case of this parameter switched off.

(1) Escribí mi nombre.

“I wrote my name”

(2) Vaig fer la compra

“I did the shopping.”

(3) *Went swimming

As we can see from the examples, Catalan (2) and Spanish (1) subjectless sentences are grammatical. On the other hand, English (3) sentences become ungrammatical if a subject is missing. This parameter would be later proved to work on a multi-parametric setting.

Next, the Head-Parameter. This parameter rules inside the phrase structure. It determines whether the head of the phrase goes at the beginning, head-initial, or at the end, head-final. Japanese (4), for example, has its head of the verb phrase, the verb, at the end. On the other hand, English (5) is consistently head initial when concerning verbs.

(4) Chokoreto ga sukidesu

“I like chocolate.”

(5) I wrote a book.

Although P&P have been vastly researched and many instances of principles and parameters have been formulated, linguists have also brought up research opposing them. Criticism has risen surrounding especially the validity of the Head parameter. Kayne (1994) proposed that the difference when regarding directionality is a matter of movement, not a matter of parameter switching. He determines that in their internal structure, all languages are head-initial, and that any perceived difference in sentence

word order is caused by movement inside the internal structure. Taking this into consideration, this paper will address this very same notion of internal structure into the Null-Subject parameter. Although the parameter has been highly researched, there have not been instances of its validity being doubted. However, if we take into consideration how this parameter works, the same arguments that support the criticism of the head-parameter can also be applied to the Null-Subject parameter. Inside the internal structure of subjectless sentences, there is an oblique subject denominated as *pro*, which fills in in the place of a subject. This paper will revise more in depth the notions of principles and parameters, explaining thoroughly the exact function of the parameters under study, addressing the criticism of one of such parameters and exemplifying how these criticisms can affect the other parameter.

1.1 PRINCIPLES AND PARAMETERS

Principles and parameters (P&P) is an approach to language learning and to *Universal Grammar* (UG) theory. It postulates that due to UG, all humans have an innate set of Principles, which determine the similarities of languages, and Parameters, which determine the differences. P&P stemmed from earlier versions of UG. Chomsky (1992:24) discussed that UG would have a set of principles attached to it, which would be regarded as the rules of grammar. Originally, UG provided rules of phrase structure and rules on transformation that formed different degrees of grammatical constructions. (Chomsky, 1992:23). These descriptive analyses were into language-invariant statements, or Principles and language-particular statements, or Parameters (Chomsky, 1992:25). P&P creates a distinction between the similarities of languages and the differences between languages.

Principles fall into two categories, “principles that are applied to construct derivations (...) and principles that apply to representation” (Chomsky, 1992:27). Principles have a natural attachment to the different modules of grammar like Phonetics or Syntax. An example would be any principle of economy. The Full Interpretation (FI) principle states that “every element of the PF and the LF, taken to be the interface of syntax (in the broad sense) with systems of language use, must receive an appropriate interpretation—must be licensed in the sense indicated. (Chomsky, 1986b:98). This means that only interpretable material is tolerated. Hence, uninterpretable features, which motivate Merge and Move should be checked, i.e. removed, before the syntactic object is submitted to the interfaces (the Conceptual-Intentional System and the Articulatory-Perceptual System).

Parameters work in regard to parameter choice or switching. The differences across languages can be explained through this term. The parameter setting of a language is what makes it have different grammar features in its UG (Huang 2016:311). The setting of these parameters often generates a by-product known as Parameter Cluser. Huang (2016:318) explained that a parameter switch would not only affect the grammatical rules of such parameter, but also bring about a few more rules that affected the grammar. For the most part, parameters work on a binary setting. A language either has a parameter active or it does not.

Examples of these parameters would be the Null-Subject Parameter, which “allow a definite pronominal subject of a finite clause to remain unexpressed” (Huang, 2016:312). In other words, sentences that for the most part need a subject to be perceived as grammatical, can work perfectly without the existence of such subject. Clear examples of this parameter switched on are Spanish (1) and Catalan (2). In contrast, we would have languages like English (5) or French (6).

(6) Je lace mes chaussures.

“I tie my shoes.”

Another example of a parameter would be the Head-Parameter. Its binary choice is a bit different. Instead of an on and off option, we have either head-final or head-first. This parameter regulates “the variation in the linear order of heads and complements” (Huang, 2016:312). In a simplified manner, this parameter decides whether phrases start or end with their complements. For example, Japanese (7) or Latin (8) are languages that will always have the head of its Verb Phrase, the verb, at the end, on the other hand, Spanish (1) and English (5) have their verbs at the beginning.

(7) Tomodachi to hanashimasu

I talk to my friend

(8) Ego cibum manducare

“I eat meat”

It can be concluded that English and French have a negative Null-Subject parameter setting and are head-initial. Spanish and Catalan have both a positive Null-Subject parameter and head-initial.

Principles and Parameters are a wide field of research. They are a subject of investigation and thus, can be a target of criticism. We are going to be seeing the particular function of the two parameters under study, and the appreciation of the criticism of one of them in the following sections.

1.2 THE PROJECTION PRINCIPLE AND THE EXTENDED PROJECTION PRINCIPLE

Before explaining how the Null-Subject parameter works we need to understand the backbone through which it functions. Sentences cannot just be subjectless, there is an underlying system that allows them to function without a subject.

As explained, Null-Subject languages allow for sentences to be grammatical without a subject. Camacho (2013:3) explains that it could be assumed that sentences in all languages have a subject, and the difference comes when the explicit production of that subject is mandatory or not. This approach was called the Projection Principle. This principle would determine that “the lexical properties of the words determine the shape of the clause throughout its derivation.” (Camacho, 2013:3). In other words, a verb is marked in the lexicon as assigning a certain number of theta-roles, which means that the same number of syntactic arguments will be needed. (Camacho, 2013:3). The Projection Principle states that subjects are required in all clauses of all languages. Camacho exemplifies this with an example in Irish:

(9) Churifeadh Eoghan isteach ar an phost sin.

“Owen would apply for that job”

(From Camacho, 2013:3, ex 4)

In this case, the verb, *churifeadh* is in charge of assigning one theta role, which means that it has to have a syntactic argument to carry that role. (Camacho, 2013:3)

The Projection Principle basically makes sure that all sentences have a subject regardless of their overtness. The lexical properties of the verb cause theta-role assignment, which in turn, causes syntactic arguments to be necessary in order to have those theta-roles assigned. If we combine this basis of the Projection Principle and the need for clauses to have subject, we obtain the Extended Projection Principle (EPP)

(Camacho, 2013:4). The EPP suggests that languages do not ever really have a missing subject, “they simply have ones that are syntactically present but not overtly realized.”

(Camacho, 2013:4). Those languages that have a non-realized subject use a fill in called *pro*. This will be further developed in the explanation of the Null-Subject Parameter.

2. THE NULL-SUBJECT PARAMETER

The Null-Subject parameter, or the pro-drop parameter, stems from Chomsky’s UG theory. When this parameter is active, it allows for a language to have sentences without a subject, as the following examples illustrate:

(10a) Compré huevos.

“I bought eggs.”

(11) Yo compré huevos.

“I bought eggs”

As we can see, Spanish is a strong case of a positive setting of this parameter. In (10a), we see that the sentence can work perfectly without a definite subject. This, however, does not mean that sentences must always be subjectless. Actually, they can also work perfectly with an explicit subject attached to them. This works in contrast with a language like English:

(12) *Bought eggs.

Unlike Spanish, English has its Null-Subject parameter switched off, so it does not allow for subjectless finite sentences. An explicit subject is necessary for grammaticality.

(13) I bought eggs.

As explained before, Parameter switching also provokes a variety of changes in the grammar of the language, not only the changes that the parameter causes. Chomsky (1982:240) lists down the clustering properties of the parameter: (i) allow for missing subject, (ii) free inversion in simple sentences, (iii) long wh-movement of subject, (iv) empty resumptive pronouns in embedded clause and (v) apparent violations of the [that-t] filter.

Regarding the internal function of the parameter, the empty position that is left due to the disappearance of the subject is not left as a void. Rather, a node called *pro* takes its place. Let us see the internal structure of (10a), represented here as (10b):

(10b) [NP_{pro}] [VP_{Compré}] [NP_{huevos}]

“I bought eggs”

Internally, the sentence has a subject which is not pronounced. However, the particle *pro* fills inside the structure. Camacho (2014:68) explains this further. According to the EPP, a structural position must be filled, and so *pro* carries out such task successfully. This is due to the need for a syntactic category to take the theta-role produced by the verb *compré*. Camacho (2013:68) describes *pro* as a syntactically distinct category. In other words, when taking into consideration the syntax of a language, *pro* will work as a replacement in those languages that allow for subjectless sentences to be grammatical.

In simplified terms, languages can either be switched to a positive or to a negative Null-Subject Parameter. If it is not active, sentences will have a consistent overt subject appearing in all situations. If it is active, sentences will be able to be produced without an overt subject, even though they could still function with an overt subject present. This, however, does not mean that the language does not have an internal structure with a missing syntactic argument. Due to the EPP, an argument is needed to carry the theta-role produced by the verb. *Pro* works as the syntactic category that takes care of the theta-role, allowing the sentence to maintain a syntactic structure with a subject which is not pronounced.

2.1 CHANGES IN THE NULL SUBJECT PARAMETER

As a widely researched parameter, the Null-Subject Parameter has also received a considerable number of changes. Parameters were stated to work on a parametric setting, but further research of the Null-Subject parameter showed that there is a window for a multi-parametric setting.

Parameters were said to have a binary switch, it is either one or the other. However, Cognola (2018) makes a three-way distinction. Languages can be “full NS languages, semi-NS languages (subtypes included) and non-NS languages.” (Cognola, 2018:53). The Null Subject parameter still has its negative and positive switch, but it now has a middleground. This would allow for an explanation to be given to certain dialect of languages that have a mixed Null-Subject parameter setting. Sessarego and Gutiérrez-Rexach (2017:61) researched this further with the dialect of Afro-Peruvian Spanish, concluding that it was partially pro-drop.

3. THE HEAD-PARAMETER

The Head-Parameter stems from the concept that “all phrases have a central element, known as the head, around which the other elements of the phrase revolve” (Abdolmanafi, 2012:2109). The Head-Parameter, similarly to any other parameter, works in a binary setting, but it has a minor difference. Instead of having a positive and a negative switch, it is either head-initial or head-final. The two different settings refer to “the variation in the linear order of heads and complements” (Huang, 2016:312). In other words, in the phrase structure, there is a single head plus a variety of complements. The parameter then stipulates the order these complements have in relation to the head. If a language is head-final, complements will precede the head. Japanese is a language that has this setting.

(14) Ringo o taberu.

“I eat apples”

In this example, *taberu*, the verb for *eat* stands in final position of the phrase. The complement *ringo* which stands for *apples*, stays just before the verb. In contrast to this, if a language is set as head-initial, the verb will stay just before its complements.

(15) I eat apples

English is a case of head-initial language. The verb resides at the beginning, controlling its complements following it. For the most part, if a language is either head-initial or head-final, all of its phrases will consistently be either head-initial or head-final. Abdolmanafi (2012:2110) references this with four examples:

(16) [VP *loves* Mary]

(17) [PP *into* the water]

(18) [AP *fond* of chips]

(19) [NP *admiration* for Sara]

(From Abdolmanafi, 2012:2110, ex a,b,c and d)

Words in italics are the head; the following elements are its complements. Verb Phrases (VP), Prepositional Phrases (PP), Adjective Phrases (AP) and Noun Phrases (NP) in English maintain their heads at the beginning while having complements follow them.

The Head-Parameter then establishes an important distinction in the directionality of phrases. Languages that are head-initial will have their head at the very left of the phrase. Languages that are head-final will have their head at the very right.

4. CRITICISM AND VALIDITY

Although Principles and Parameters have been highly researched, a substantial amount and criticism has also been manifested. Linguists did not necessarily disagree

with the possibility of P&P being part of the UG, but they seemed to oppose some of Parameters that resided within them.

This criticism has notably put the validity of the Head-Parameter into question. The need for a directionality parameter is what has caused this distinction. Kayne (1994:47) was one of the first to take this into consideration.

He assumed that if Universal Grammar (UG) has a default Subject-Head-Complement order, there is no need for a parameter that decides the directionality of phrases regarding head and complements. He argued that order variation is caused by movement inside the internal structure of the phrases. He held that for a complement to precede a head, such head must have moved that very same complement to the left.

This criticism did not end with Kayne. He placed a general argument. Other authors supporting his stance would exemplify it through instances in different languages.

Zwart (1994:1) argued that although Dutch's Subject-Verb-Object order was caused by an internal Subject-Object-Verb, this internal structure was also derived from an internalized Subject-Verb-Object order. He stated "the hypothesis that all representations in a derivation are built up by the same structure building process of Generalized Transformations. Thus, there is no structural difference between an initial representation (formerly built up by 'rules of the base') and derived representations (built up in the process of movement)." (Zwart, 1994:1). This means that first, Dutch, whose structure was originally seen as Subject-Object-Verb, indicating that it was head-final, or a mix with head-initial, is now reanalysed as head-initial. In addition to this, he added that due to Generalized Transformations, there was no differences between what is represented in the sentence and its underlying structure. Therefore, it is possible to

assume that there is a “universal blueprint” (Zwart, 1994:1) that is head-initial. Zwart also held that the differences in word order of languages are to be seen as the result of movement to the left by the subject, object or verb. (Zwart, 1994:2). The possibility of languages being completely head-initial is visible, with instances of movement to the left inside the structure causing the word order to change.

This criticism, however, was not accepted by all linguists. Bhatt and Dayal (2007:287) analysed Indo-Aryan languages. Their research argued against Kanye’s Antisymmetric approach by illustrating how “Hindi-Urdu has a relatively free word order: phrases can appear to the left of their canonical position (leftward scrambling) as well as to the right (rightward scrambling)”. This meant that there were languages that had the possibility of having a structure which is head-final. In a similar note, Takita (2009) also did similar research on the Japanese language. Considering “evidence supporting the hypothesis that Chinese is head-initial suggests in turn that Japanese cannot be head-initial.” (Takita, 2009:42). In his paper it was argued that the same underlying structures that are head-initial in Chinese and that then surface into head-final sentences were not possible to mirror in Japanese. This is due to the “Condition on Extraction Domain (Huang 1982, henceforth CED), which prohibits movement from within non-complements.” (Takita, 2009:42). Basically, CED should manifest when Japanese’s head-final structures become derived from the underlying head-first structure, with Takita (2009:42) arguing that “Japanese has genuine head-final structures.” These would be two particular examples of languages being likely to be head-final.

5. THE HEAD-PARAMETER AND THE NULL-SUBJECT PARAMETER REVISITED

The main argument against a directionality parameter existing is Kayne's (1994) Antisymmetric approach. He argues that all languages have an inherent Subject-Verb-Object, in other words, that all languages are head-initial. Any visible difference in the order of the elements of a sentence would be then explained through some movement in the internal structure. This would be the main argument against the validity of the parameter. This would be supported by Zwart (1994), who would illustrate how Dutch could be head-initial and head-final at the same time. This, however could also indicate another instance of a three-way setting for a parameter.

The Null-Subject Parameter has yet to receive an attack on its validity. It is true that it has received enough research to change its original binary setting to a multiple setting choice, but its necessity as a part of the UG is still unquestioned.

Let us consider for a moment the basis for Kayne's (1994) Antisymmetric approach. If the Head-Parameter is not necessary due to the internal structure of the sentence, the same could also be argued for the Null-Subject Parameter, especially considering that now it has a three-way switch. This connects well with Zwart's (1994) findings, as now both parameters seem to have the possibility of not being a binary choice. Moreover, due to the EPP, we know that all sentences have a subject, the only difference being that in sentences that do not have a visible subject, *pro* works as the placeholder of the subject.

Looking closely, arguments for the invalidity of the Head-Parameter and the validity of the Null-Subject Parameter seem to exist on the same field. Their arguments

are supported by an underlying structure that presents a subject that is always there and a structure that is head-initial.

It could be argued that there may be no need for a parameter that takes into consideration null subjects. If we consider that all sentences do have a subject due to the EPP, the difference between languages being able to have subjectless sentences might not be caused by an inherent parametric setting, but to a matter of interpretation. A factor that may support this, is the necessity of adding a third option to a parameter, which tend to be always binary. Frascarelli (2019) reviewed this very same option in several varieties of Spanish, as some of them were partially Null-Subject positive. The data analysis showed that “the acceptability of an NS is variably dependent on the syntactic conditions assumed as variables (Frascarelli, 2019:192). This means up to a certain degree, that the Null-Subject parameter might need a revision. It may be possible to find further evidence that, instead of adapting the parameter to switch with three options in order to compile all the languages that have structures that can have null subjects and others that do not, the possibility of the parameter not being part of the UG be considered for future research.

6. CONCLUSION

Principles and Parameters are an important factor when considering UG theory and its implications. The way they work is still researched to this day and they are object of debate, changes and criticism. The Null-Subject Parameter and the Head-Parameter are two of the most developed parameters in a theoretical sense. They also encapsulate two of the biggest differences across languages. One is the possibility of

sentences being grammatical even in the absence of a subject. Frascarelli's (2019) and Sessarego's (2017) research may indicate that this parameter now has three options: (i) a language can fully use subjectless sentences, (ii) a language can have subjectless sentences in some cases, or (iii) a subject is mandatory for every sentence in all languages. Those languages that do not have a subject will have a placeholder called *pro* in its underlying structure in order to maintain the Extended Projection Principle, which stipulates that a subject is needed to fulfil the verb's theta-role requirements, provoking *pro* to take the place of the subject in null subject sentences. The Head-Parameter works in a binary way regarding the order of the head and the complements. Head-final languages will have the head at the end with its complements preceding it and vice versa. Disregarding whether a language is head-initial or head-final, phrases will consistently follow the parameter choice, as exemplified by (16), (17), (18) and (19). Kanye's (1994) Antisymmetric approach would question the need for a parametric setting, stating that all languages have a head-initial structure, but movement would make the surface sentence appear head-final in cases such as (7) and (8).

The relationship between the underlying structures of both parameters might make it possible to question not only the necessity for a directionality parameter, but also for a Null-Subject parameter. It could also be considered that parameters in a more general note might not work on a binary setting but on a multiple parametric setting, allowing for languages to have exceptions on their systems or to be mixed, in the sense that both parameter choices could coexist. Moreover, according to the theory, the way both parameters work has a very strong link to the underlying structure of the language. This means that as possible future research, the validity of both parameters could be questioned.

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Glossary

(1) Escribí mi nombre.

“I wrote my name”

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“Owen would apply for that job”

(From Camacho, 2013:3, ex 4)

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