MOVEMENT AND ISLANDS: A KEY ISSUE IN GENERATIVE GRAMMAR

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ABSTRACT:

This paper provides a brief overview of the main proposals, adopted in the generative framework, for island constraints. Starting from Ross (1967) through minimalist accounts, it addresses the most relevant concepts related to islands, emphasizing the search for a theoretical account for the phenomenon, but also stressing the challenges this kind of data poses for formal approaches. Some alternative accounts to islands, particularly processing considerations, are also briefly commented upon. The article concludes highlighting some compatibilities between both approaches and stressing the relevance of a syntactic treatment to islands.

Keywords*:* island constraints; strong islands; weak islands; formal accounts; processing accounts

RESUMO:

Este artigo apresenta um panorama condensado das principais propostas, adotadas no quadro gerativista, para o fenômeno das ilhas sintáticas. Partindo de Ross (1967) até estudos conduzidos na abordagem minimalista, o estudo apresenta os principais conceitos relacionados ao fenômeno, enfatizando a busca por uma proposta teoricamente embasada, ao mesmo tempo em que desafios se colocam para a abordagem formal a partir desse tipo de dado. Algumas abordagens alternativas, particularmente considerações de processamento, são também apresentadas. Defende-se que embora haja compatibilidades entre as abordagens formal e de processamento, um tratamento sintático das restrições de ilhas é desejável.

Palavras-chave*:* ilhas sintáticas; ilhas fortes, ilhas fracas; abordagens formais; processamento

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1. INTRODUCTION

Movement has been a key concept in transformational theories of generative grammar. It is how displacement numén phenomena have been characterized: it relates two syntactic positions – usually the position where an element is spelled out (in bold) and its corresponding position where it can be semantically interpreted (marked as __ in (1) below):

(1)   **Who** did John see ___?

Different kinds of movement have been characterized: a distinction between A and A'- movement is one of great relevance, as well as head and phrasal movement.[2] But one of the key issues concerning movement was brought to the scene by Ross (1967), who approached the subject not from the point of view of possible movements found in human languages, but rather distinguished a number of syntactic environments from which movement wouldn't be allowed. These configurations came to be known as syntactic islands.

The theme of this publication is the 60th anniversary of one of the starting texts in generative grammar – *Syntactic Structures* by Noam Chomsky (1957). The aim of this paper is to present a brief retrospective of how movement and syntactic islands, in particular, have been treated throughout the different proposals Chomskyan generative literature has put forward in this now long and certainly productive journey.

2. MOVEMENT AS TRANSFORMATIONS

The first concept of movement appeared as part of transformations, which were proposed in order to relate kernel sentences to derived ones. In *Syntactic Structures* (Chomsky, 1957), Chomsky argues for a transformational component in order to better describe the structures of sentences in a given language (Chomsky, 1957:61):

> Our goal is to limit the kernel in such a way that the terminal strings underlying the kernel sentences are derived by a simple system of phrase structure and can provide the basis from which all sentences can be derived by simple transformations: obligatory transformations in the case of the kernel, obligatory and optional transformations in the case of non-kernel sentences.

Transformations are specified in terms of a description of the strings to which they apply and the structural changes that these strings go through. The passive transformation, for example, follows below ((34) in Chomsky, 1957):

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2   A and A'-movement distinguish argumental from non-argumental dislocation. Movement of an internal argument to subject position in a passive sentence is an example of A-movement. Movement of a wh-element to the left periphery of the sentence is an example of A'-movement. Phrasal and head movement distinguish the movement of a head, like verb movement, for example, from movement of phrases, like the ones mentioned above. Both passives and wh-interrogatives, for example, deal with the movement of a DP.

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(2)   If S_1 is a grammatical sentence of the form

        $NP_1 – Aux – V – NP_2$,

then the corresponding string of the form

        $NP_2 – Aux + be + en – V – by + NP_1$

is also a grammatical sentence.

Negative, relative and interrogative transformations were some of the most productive ones as well. It is very interesting to point out a few remarks Chomsky puts forward when arguing for a model of grammar that incorporates transformations. He stresses that: "[…] the behavior of a sentence under transformations provides valuable, even compelling evidence as to its constituent structure". (Chomsky, 1957: 81)

When island constraints are discussed, identifying the type of constituent structure that allows for movement or prohibits it becomes the central focus of analysis.

3. ISLAND CONSTRAINTS (ROSS, 1967)

Ross's work follows from his disapproval of the A-over-A Principle Chomsky had proposed some years earlier (Chomsky, 1964) while discussing relative and question transformations. The A-over-A Principle states that (Chomsky, 1964:931, *apud* Ross, 1967:13):

> if the phrase X of category A is embedded within a larger phrase ZXW which is also of category A, then no rule applying to the category A applies to X (but only to ZXW).

Ross (1967) shows that the principle is both too strong and too weak, but the idea that movement should not apply freely and should be constrained was set forth and therefore came under scrutiny for the next years. In this context, Ross puts forward the concept of island constraints, which bear directly on the syntactic environments from which movement of constituents would be blocked. Three major island constraints were brought onto the scene: the Complex NP constraint, the Coordinate Structure constraint, and the Sentential Subject constraint.

The Complex NP constraint states that ((4.20) in Ross, 1967:127):

> No element contained in a sentence dominated by a noun phrase with a lexical head noun may be moved out of that noun phrase by a transformation.

This accounts for the ungrammaticality of extraction from relative clauses or complement sentences to nouns ((4) is example (4.18a) in Ross, 1967):

(3)   *What$_i$ did you find the mechanic who fixed t$_i$?
(4)   *The hat which I believed the claim that Otto was wearing is red.

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The Coordinate Structure constraint states that: ((4.84) in Ross, 1967:162):

> In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct.

Thus excluding sentences like (examples (2.18) e (2.19) in Ross, 1967):

(5)   *What sofa will be put the chair between some table and?
(6)   *What table will be put the chair between and some sofa?

Finally, the Sentential Subject constraint states that ((4.254) in Ross, 1967:243):

> No element dominated by an S may be moved out of that S if that node S is dominated by an NP which itself is immediately dominated by S.

Thus preventing extraction out of sentential subjects in sentences such as (example (4.260) in Ross, 1967):

(7)   *The hat which that I brought seemed strange to the nurse was a fedora.

It is relevant to add to these island constraints the WH-island constraint (Chomsky, 1973), which shows that extracting elements from an indirect question is not allowed:

(8)   *Who don't you know where bought this book?

Island constraints then posed an important question, which was sought within the generative framework and outside it: can islands be accounted for by more general syntactic principles or more general non-syntactic principles, such as processing factors or pragmatic principles?

An attempt to reduce islands to a general syntactic principle was taken by Chomsky (1973), who proposed the Subjacency Condition.

4. THE SUBJACENCY CONDITION (CHOMSKY, 1973)

Movement has to be constrained while at the same time seems to be very free, so to speak. Notice that very long distance movement is possible in sentences like:

(9)   What did you say Mary thinks John has bought __?

The proposal of the Subjacency Condition as an attempt to reduce island constraints to a single principle focused on limiting movement by defining bounding nodes, while at the same time leaving space for long movement of constituents. The Condition stated that (in Chomsky, 1977:73):

> A cyclic rule cannot move a phrase from position Y to position X (or conversely) in … X … [α… [β… Y …] …] … X …, where α and β are cyclic nodes. Cyclic nodes are S and NP.

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In other words, the crossing of two bounding nodes gave rise to ungrammaticality. The bounding nodes were NPs or Ss (DPs and TPs, nowadays), but movement could proceed cyclically, that is, long distance movements were seen as a series of shorter ones. Thus, in sentences like (9) (repeated as (10) below), intermediate CPs would count as landing sites for the A-bar movement and as such only one bounding node – TP – would be crossed for each step of the long movement, constituting no violation of the Subjacency Condition:

(10)   What did you say [CP __ Mary thinks [CP __ John has bought __?

Interestingly, two nodes would be crossed in some island constraints. The Complex NP constraint covers relative clauses and sentential complements to nouns. Sentence (3) is repeated below, as (11):

(11)   *What$_i$ did you find [DP the mechanic [CP who fixed t$_i$?

In (11), the relative pronoun occupies Spec, CP preventing an intermediate stop there and right above this CP there is a DP. Thus, there are two bounding nodes crossed between the original position of the WH and its final landing site.

For sentence (4), repeated below as (12), there is an intermediate stop for the movement, Spec, CP of the lower clause. Nevertheless, there are still two bounding nodes to be crossed on the way up – the DP (*the claim*) and the TP of the higher clause.

(12)   *The hat [CP which TP[I believed [DP the claim [CP that Otto was wearing is red.

The same reasoning will be applied for the Coordinate Structure constraint, where both a DP and a TP will be at stake. As far as the Sentential Subject constraint is concerned, sentence (7) is repeated below, as (13). The sentential subject is a DP, containing a CP and two bounding nodes are crossed for movement to the left periphery:

(13)   *The hat [CP which [DP [CP that I brought seemed strange to the nurse was a fedora.

An important observation was made in relation to what counted as a bounding node. Rizzi (1982) pointed out that, for Italian, the relevant bounding nodes to be considered were NP and S' (that is, CP) and not S (TP). The same seems to hold for Portuguese. This distinction is particularly relevant for the Wh-island constraint, which shows higher acceptability in Romance languages than in English (see (8) below, repeated as (14), compared to its counterpart in Portuguese (15)):

(14)   *Who$_i$ [TP don't you know [CP where$_j$ [TP t$_i$ bought this book t$_j$?
(15)   O que$_i$ [TP você não sabe [CP onde$_j$ [TP a Maria comprou t$_i$ t$_j$?

Movement of *where/onde* crosses a single bounding node in English (TP), but no bounding node in Portuguese. In any case, this movement does not violate the constraint in either language. Movement of the other wh-word will not be able to use the intermediate step in Spec, CP of the embedded clause, which is occupied by *where/onde*. Its movement will thus, in English, cross two bounding nodes – the two TPs of the embedded and the matrix clause, resulting in a Subjacency violation. In Portuguese, however, there is only one bounding node – the embedded CP - being crossed and no violation results.

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Nevertheless, there is another important distinction to be examined. Although (15) is considered grammatical, if the wh-adverbial adjunct is long-moved and the wh-argument gets to the embedded CP, ungrammaticality arises (see (16)[3]:

(16)   *Como$_j$ você não sabe o que$_i$ a Maria comprou t$_i$ t$_j$?

The Subjacency Condition cannot account for this distinction. Instead, it becomes subjected to the Empty Category Principle (ECP) (Chomsky, 1981). This principle refers to traces of movement and their government. The ECP states that:

(17)   Empty Category Principle (ECP)
              Traces must be properly governed:
              A properly governs B iff A theta-governs B or A antecedent-governs B
              A theta-governs B iff A governs B and A theta-marks B
              A-antecedent governs B iff A governs B and A is coindexed with B

The ECP makes a clear distinction between the extraction of objects and adjuncts. It also turns out to be relevant for the observation made by Huang (1982) that extraction from adjuncts and specifiers is worse than extraction of complements (The Condition on Extraction Domains (CED)).

The relation to the concept of government will be at the center of the notion of barriers, which came to be proposed by Chomsky (1986). The intention is to eliminate the stipulative character of the bounding nodes in the Subjacency Principle.

5. BARRIERS (CHOMSKY, 1986)

This new proposal is an attempt to unify Subjacency, the CED and the ECP under the notion of (proper) government. Both Subjacency and the CED rule out cases of movement where two or more barriers are crossed. For the ECP, only one barrier between a trace and its lexical governor or antecedent governor is enough to rule out the relevant cases.

An important concept in the Barriers system is that of L(exical)-Marking:

(18)   L-Marking
         α L-marks β iff α is a lexical category (N, V, A or P) that theta-governs β.

This is relevant for the concept of Blocking Category, which identifies Barriers:

(19)   Blocking Category (BC)
         γ, an Xmax, is a BC for β iff γ dominates β and γ is not L-marked.

(20)   Barrier
         γ is a Barrier for β iff (a) or (b):
         (a) γ immediately dominates δ, δ a BC for β, or

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3   The possible interpretation of *how/como* with the matrix sentence is irrelevant.

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(b) γ is a BC for β, γ ≠ IP

In the Barriers system, then, there are two types of barriers: inherent barriers, defined in (20b) and barriers by inheritance, as in (20a). Besides this, Chomsky makes reference to minimality, which concerns government relations:

(21)   Minimality Condition on Government
        In a configuration such as:
        … α… [$_\gamma$ … δ … β…]
        α does not govern β if γ is a projection of δ excluding α.

The concepts outlined above are relevant for showing why island constraints are deviant structures. They also draw a firm distinction between extraction of complements versus adjuncts. Let us consider relative clauses. Sentence (3/11) is repeated below, as (22). It shows movement of an argument, while sentence (23), which is also a relative clause, shows movement of an adjunct:

(22)   *What$_i$ did you find [$_{DP}$ the mechanic [$_{CP}$ who fixed t$_i$?
(23)   *How$_i$ did you find [$_{DP}$ the mechanic [$_{CP}$ who fixed the car t$_i$?

Both structures present two barriers: CP (relatives are not L-marked) and NP (a barrier by inheritance). Thus, there is a violation of the Subjacency Condition. As far as the ECP is concerned, however, there is a difference between these two structures. Sentence (22) presents a trace that is properly governed, since it is theta-governed by the verb. In sentence (23), the ECP is violated. The trace is not theta-governed nor antecedent-governed, due to the barriers. In fact, sentence (23) is considered worse than (22).

Let us now take a look at complement clauses to nouns. Consider sentences (24) and (25), cases of argument and adjunct extraction. Argument extraction is a lot better than adjunct extraction, and is also more acceptable than the previous extraction from relative clauses (22 and 23 above):

(24)   ??What$_i$ did you hear [$_{NP}$ the rumor [$_{CP}$ that Mary had bought t$_i$?
(25)   *How$_i$ did you hear [$_{NP}$ the rumor [$_{CP}$ that Mary had fixed the car t$_i$?

Contrary to a relative clause, the embedded sentence here is L-marked by the noun. Thus, it does not constitute a barrier nor does the NP inherits its condition as such. As far as the ECP is concerned, (24) does not violate it either, whereas (25) presents a barrier for minimality – the NP -- and violates it. Thus, (25) is correctly ruled out, but the mildly deviant character of (24) is unaccounted for.

For sentential subjects, the same two nodes stipulated in the Subjacency Condition will count as barriers – NP and CP (see sentence (13)). A subject is not L-marked for it is not directly theta-marked. Although it receives a theta-role, the VP and not the lexical category V assigns it.

The Barriers system tried to deal with degrees of acceptability: dependencies crossing no barriers would be considered perfectly acceptable, if one barrier is crossed, a marginal acceptability would arise, but anything higher would lead to a considerable impact on acceptability. Nevertheless, by

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the end of the 1990's, according to Carnie (2006: 49), "Barriers is widely considered to have been a failure".

As is well known, a broad reconceptualization of the basic mechanisms for the derivation of sentences in the generativist enterprise took place in the 1990s, with the advent of the Minimalist Program (MP) (Chomsky, 1995 and subsequent work). This also impacted the treatment of island constraints.

6. MINIMALIST ANALYSES AND ISLAND CONSTRAINTS

Islands constraints did not receive much attention for a while in the minimalist era of the generativist enterprise. Boeckx (1999:4-5) states that:

> It is difficult to establish with certainty the reason why islands came to be ignored in MP, but part of it, at least, is clear: Ontologically, islands are 'odd'. […] Ontological Minimalism goes one step further, and takes the claim of optimal design specifications first made in Chomsky 1993 seriously. Ontological Minimalism is committed to the claim that all mechanisms in the computational system are present only to meet output (interface) conditions in an optimal way. Within Ontological Minimalism, islands, and successive cyclicity, should be emergent properties of the computational system (since, clearly, they cannot be optimal ways of meeting interface requirements). So far, this has proven a major stumbling block.

It is no easy task to provide a minimalist account for island constraints. Instead of counting bounding nodes or barriers, minimalist analyses focus on the impossibility of movement at a specific point in the derivation of the sentence, which will prevent features from being checked, leading the derivation to crash. The notion of phases will then play an important role.

(26)   Phase Impenetrability Condition (Chomsky 2000:108)
        In phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations.

Islands can be characterized in terms of strong and weak islands (Cinque, 1990). The former, which include Subject islands, complex NP islands and adjunct islands, arise due to the impossibility of long movement. The latter, which include wh-islands, negative islands, factive islands and extraposition islands, give rise to asymmetries between extraction of arguments or adjuncts, as already mentioned. Nevertheless, there is an attempt to handle both types of islands by similar, although still specific mechanisms, as part of syntactic constraints on well-formedness.

The structure of island constraints are comprised of different phases for their derivation, trapping an element whose movement would be necessary inside an impenetrable phase, otherwise containing a path of derivation that will not provide what is necessary for the checking of features. Different

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proposals have elaborated on such reasoning (Manzini 1997, Nunes & Uriagereka 2000, Stepanov 2001, Hornstein 2001, Hornstein & Nunes 2002).

For Nunes & Uriagereka (2000), for example, CED effects are captured by the idea of multiple spell-outs (Uriagereka, 1999). Multiple Spell-out (Uriagereka, 1999) is an attempt to derive the LCA (Linear Correspondence Axiom) of Kayne (1994), concerned with the linearization of terminals. Uriagereka refers to the two steps involved in the LCA:

Base step: If α c-commands β, then α precedes β.

Induction step: If γ precedes β and γ dominates α, then α precedes β.

Multiple Spell-Out seeks to eliminate the induction step, by allowing spell-out to apply to each c-command unit as soon as it is assembled. These units are shipped to the PF component and their internal constituency is no longer available for the operations of the computational system – only their label remains. This perspective is assumed in order to account for CED effects, that is, when extraction out of a subject or an adjunct clause yields unacceptable results (examples from Augusto, 2003).

(27)   *$[_{CP}$ [Que livros]$_i$ [$_{IP}$ [comprar t$_i$] é difícil]]
(28)   *$[_{CP}$ [Que livro]$_i$ [$_{IP}$ você perdeu Lavoura Arcaica [$_{PP}$ depois de comprar t$_i$]]]

Specifiers (as the sentential subject [*comprar que livros*] in (27)) and adjuncts (as the PP [*depois de comprar que livro*] in (28)) constitute independent c-command units and as such are spelled-out, leaving a label that functions as an address, connected to the phrase marker under derivation. When the CP layer is reached and a requirement for a WH-feature is encountered, the wh-elements are no longer accessible, since they are part of the previous spelled-out structure – the subject and the adjunct blocks. Thus sentences (27) and (28) could not be derived and the failure to check the wh-feature in C would lead the derivation to crash.

Interestingly, Nunes & Uriagereka's system is also able to explain possible similar structures when a parasitic gap is involved[4], making use of the copy theory of movement, allowing for sideward movement (movement between two unconnected syntactic objects) by Nunes (1995, 1999).

Another important concept for the treatment of islands in the Minimalist Program bears on the notion of Relativized Minimality, put forth by Rizzi (1990:7):

X α-governs[5] Y only if there is no Z such that:

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4   Compare (for more details, see Nunes & Uriagereka (2000):
       (1) a. *[CP [which politician]$_i$ [C' did+Q [IP [pictures of t$_i$] upset the voters]]]
          b. *[CP [which paper]$_i$ [C' did+Q [IP you read Don Quixote [PP before filing t$_i$]]]]
       (2) a. [CP [which politician]$_i$ [C' did+Q [IP [pictures of pg$_i$] upset t$_i$]]]
          b. [CP [which paper]$_i$ [C' did+Q [IP you read t$_i$ [PP before filing pg$_i$]]]]
5   α-government ranges over head government and antecedent-government:
Head-government: X head-governs Y iff
(i) X   {A, N, P, V, Agr, T}
(ii) X m-commands Y
(iii) no barrier intervenes
(iv) Relativized Minimality is respected.
Antecedent-government: X antecedent-governs Y iff

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(i) Z is a typical potential α-governor for Y,

(ii) Z c-commands T and does not c-command X.

This is the core idea behind the Minimal Link Condition (Chomsky 1995), an economy derivational condition, which states that derivations with shorter links are preferred over derivations with longer links (Chomsky 1995:311):

Minimal Link Condition: (MLC)

K attracts α only if there is no β, β closer to K than α, such that K attracts β.

This condition will be directly relevant to deal with WH-islands. Chomsky (1995) discusses the derivation of sentence (29):

(29)   *How did you wonder what John fixed?

The Wh-feature in matrix CP is an attractor seeking for a wh-element. However, *what* in the embedded Spec, CP would be a closer matching element than *how*, an adjunct to the embedded clause (see 30). This element would thus be inaccessible and the ungrammaticality of the sentence is explained as an impossibility in derivation.

(30)   did+Q[+wh] you wonder what John fixed how

There is however a problem with this analysis: if *what* is a wh-element and is accessible in the embedded Spec, CP, it should move once again in order to satisfy the requirement for a wh-element of the matrix CP, that is, sentence (31) should be a convergent derivation of the computational system.

(31)   *What did you wonder John fixed how?

For Chomsky (1995), such derivation would fail (or converge as "gibberish"), since there is no well-formed meaning to be associated to it. Chomsky (2000), however, proposes a different analysis. He assumes that a checked feature is deleted and thus not available for further checking, although it still counts as an intervening element, blocking the movement of a further element, as argued for in relativized minimality and the MLC.

These formal accounts proposed have many strengths but also have faced many problems, since many unusual properties of islands have been revealed during research into the phenomenon, including contexts in which island effects are attenuated or even eliminated.

(i) X and Y are coindexed
(ii) X c-commands Y
(iii) no barrier intervenes
(iv) Relativized Minimality is respected.

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7. STRONG AND WEAK ISLANDS AND ALTERNATIVE APPROACHES

There is an effort to account for island constraints from a processing perspective, which relies on two facts: the difficulty that object dependencies seem to impose for comprehension and the extra processing cost imposed by the need to access discourse referents at clause boundaries. These notions are at the heart of the proposals by Kluender (1998, 2004), for example. Phillips (2013:15) observes that:

> Such accounts argue that island violating sentences are, in fact, grammatically well-formed, and that the perception of unacceptability reflects the conspiracy of two independently motivated effects that jointly overload a speaker's language processing resources. Long-distance extraction is associated with judgments of increased sentence complexity and comprehension difficulty (Gibson 1998; Hawkins 1999; Fiebach, Schlesewsky, & Friederici 2002; Phillips, Kazanina, & Abada 2005). […] when the two phenomena coincide, they are claimed to overload the available resources, leading to the perception of unacceptability. […] I refer to these proposals as resource-based reductionist accounts.

There are also some accounts that focus on semantic or pragmatic constraints in order to account for island effects (Ambridge & Goldberg, 2008). Dillon & Horsntein (2013), making use of experimental syntax, challenge this kind of explanation by contrasting the following pair of sentences, controlling for semantic interpretation (example (4) in the original):

(32)   a. Mary heard John clumsily attempt to kiss Mary
        b. Mary heard John's clumsy attempt to kiss Mary

These sentences are near synonyms; they present minimal lexical differences, but are structurally distinguished. The complement to the verb *hear* in (32a) is clausal while the one in (32b) is a complex NP island. Their experiment contrasted the extractability from both sentences and the results confirmed that acceptability is sensitive to syntactic structure, since the extraction from (32b) resulted in reduced acceptability compared to extraction from (32a). The authors conclude that:

> As stated at the outset, the present results are not intended to adjudicate between processing and representational accounts of island phenomena. Rather, the aim of the present work was to try and sharpen the statement of the constraints on extraction by providing further evidence that the constraints are linked to structural facts of the sentences under consideration. There are a number of processing theories that link the difficulty in island constructions to on-line structure building limitations (Berwick and Weinberg 1984; Pritchett 1991; Kluender and Kutas 1993b; Hawkins 1999; Kluender 2004), and the present results are compatible with such claims.

It seems that island phenomena have been scrutinized now for such a long time and the picture that emerges is that, on one side, grammatical accounts face difficulty to arrive at an explanation that

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successfully covers the wide range of peculiarities that various islands present. On the other side, processing accounts also leave relevant data unexplained. Phillips (2013) states that there are two important questions to be addressed by formal accounts of island phenomena: (i) What is responsible for 'acceptable island violations'?, and (ii) How do children come to know the island constraints of their target language, despite the evidence for cross-language variation and limited relevant input?

There are compelling results referred to by de Villiers & Roeper (1996) that children ages 3 to 6 do obey island constraints. Most of the results discussed have been obtained by means of the *Questions after Stories* technique. Children show clear preference for providing short-distance answers for potentially ambiguous questions presenting a syntactic island configuration ((33), example (6) in the original), whereas both short and long-distance answers are provided for ambiguous questions displaying no island violation ((34), example (2) in the original).

(33)   When did he say ___ how he hurt himself *___?
(34)   When did the boy say ___ he hurt himself ___?

It is relevant to point out though that results are not so clear for younger children if the syntactic structure is not mastered yet. For example, a test of comprehension of relative clauses and the obedience to the ban on movement from within relative clauses were correlated (Otsu, 1981). Children who mastered relative clauses showed adult behavior, construing the preposition in (35) (example (7) in the original) with the main clause.[6]

(35)   What is Jane drawing a monkey that is drinking milk with?

As far as acceptable island violations are concerned, it may be seen as an attempt to be cooperative with an interlocutor by considering possible alternative worlds for pragmatically accommodating an utterance while searching for an interpretation of some deviant production. Processing considerations can also be considered. For example, incremental production can be regarded as a factor contributing for the alternative of allowing for a resumptive pronoun in some islands. Horsntein (2001) offers a formal account for such cases, since he argues that resumptive pronouns are a last resort strategy, inserted in the derivation when movement is not licit. It seems that different explanations can be addressed to the same facts.

Actually, there are some other compatibilities to be traced between minimalist approaches and processing accounts. The notion of phases, for example, adopted in the MP, may be associated to the idea of processing chunks that may be kept in working memory during processing. The notion of intervening elements in a Relativized Minimality approach (Rizzi, 1990; Friedmann, Belletti & Rizzi, 2009) is also a formal notion that can be associated to processing concerns as the additional costs related to the number of referents to be mapped during the processing of complex sentences (Gibson, 1998; 2000). Nevertheless, the long-standing notions of grammaticality and acceptability are still crucial, and further research is needed.

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6   Our results on the acquisition of factive islands (Dias, 2012; Dias & Augusto, 2011) also corroborate these findings. Children progressively show obedience to this syntactic island, as they master relevant structural complexities (see also Schulz, 2003).

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CONCLUDING REMARKS

This paper had two aims: (i) as part of this celebrating edition of the generative enterprise, it aimed at providing a picture of the treatment syntactic islands have received during the past half century of generative formal research, (ii) in doing so, it also aimed at briefly bringing forward some of the critics the analyses may have received from alternative frameworks. It has been highlighted that some compatibilities may be traced between minimalist approaches and processing accounts, which may be at the heart of a comprehensive treatment of islands. Actually, both the critics and the compatibilities between these different approaches corroborate the view that this phenomenon is of great interest for a better understanding of the very nature of the computational system of human language.

REFERENCES

Ambridge, B. & Goldberg, A. (2008). The island status of clausal complements: Evidence in favor of an information structure explanation. *Cognitive Linguistics*, 19, 357-389.

Augusto, M. R. A. (2003). *Padrões de extração em estruturas factivas*. Tese de Doutorado. Universidade Estadual de Campinas.

Boeckx, C. (1999). *Extractions*. Ms., University of Connecticut.

Carnie, A. (2006) Island Constraints. In : K. Brown (ed.) *Encyclopedia of Language & Linguistics*. 48-51. Oxford: Elsevier.

Chomsky, N. (1957). *Syntactic Structures*. Mouton, The Hague.

_____. (1964). The logical basis of linguistic theory. In: H. Lunt (ed.) *Proceedings of the Ninth International Congress of Linguists*, Cambridge, Mass., 1962, The Hague: Mouton & Co.

_____. (1973) "Conditions on Transformations", in Anderson, S.R. & P. Kiparsky (eds.), *A Festschrift for Morris Halle*, Holt, Reinehart and Winston, Inc., New York.

_____. (1981) *Lectures on Government and Binding*. Dordrecht, Holland, Foris.

_____. (1986) *Barriers*, MIT Press, Cambridge, Massachusetts.

_____. (1995). *The Minimalist Program*. Cambridge, MA: The MIT Press.

_____. (2000). Minimalist Inquiries: the framework, In: Martin, R., D. Michaels & J. Uriagereka (eds.) *Step by step*. Essays on minimalist syntax in honor of Howard Lasnik, Cambridge, Mass., 89-155.

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Cinque, G. (1990). *Types of A' Dependencies*. The MIT Press, Cambridge, Massachusetts.

de Villiers, J. & Roeper, (1996). Questions after stories: Supplying context and eliminating it as a variable. In D. McDaniel, H. Cairns, & C. McKee (Eds.), *Methodology in child language research* (pp. 163-188). Hillsdale, NJ: Erlbaum.

Dias, S. C (2012). *Aquisição da factividade: complementação infinitiva e extração-QU no português brasileiro.* Dissertação de Mestrado. Universidade do Estado do Rio de Janeiro.

Dias, S. C.; Augusto, M. R. A. (2011). Factividade e interrogativas-QU: um experimento com crianças falantes de PB. In: VIII ENAL / II EIAL Encontro Inter/Nacional sobre Aquisição da Linguagem, 2012, Juiz de Fora. Anais do VIII ENAL / II EIAL Encontro Inter/Nacional sobre Aquisição da Linguagem. Juiz de Fora: Programa de Pós-Graduação, p. 49-62.

Dillon, B. & Hornstein, N. (2013). On the structural nature of island constraints. In: Sprouse & Hornstein (eds), *Experimental Syntax and Island Effects*. pp 208-222.

Friedmann, N.; Belletti, A. & RIZZI, L. (2009). Relativized relatives: Types of intervention in

the acquisition of A-bar dependencies. *Lingua*, 119, 67-88.

Gibson, Edward. 1998. Linguistic complexity: Locality of syntactic dependencies. Cognition 68, 1-76.

Gibson, Edward. 2000. The dependency locality theory: A distance-based theory of linguistic complexity. In Alec Marantz, Yasushi Miyashita, and Wayne O'Neill (Eds.), Image, language, brain: Papers from the first mind articulation project symposium, 95-126. Cambridge, MA: MIT Press.

Hornstein, N. (2001). *Move! A minimalist theory of construal*. Blackwell, Oxford.

_____. & J. Nunes (2002). Asymmetries between parasitic gaps and across-the-board extraction constructions, *Syntax* 5.1.

Huang, C.-T.J. (1982). *Logical relations in Chinese and the theory of grammar*. Doctoral Dissertation, MIT, Cambridge, Mass.

Kayne, R. (1994). *The Antisymmetry of Syntax*. MIT Press, Cambridge, Mass.

Kluender, R. (1998). On the distinction between strong and weak islands: A processing perspective. In: P. Culicover & L. McNally (eds.), *Syntax and Semantics* 29: The limits of syntax, pp. 241-279. San Diego, CA: Academic Press.

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_____. (2004). Are subject islands subject to a processing account? In: Vineeta Chand (ed.), *Proceedings of 23rd West Coast Conference on Formal Linguistics*. 475–499. Somerville, MA: Cascadilla Press.

Manzini, R. (1997). A minimalist theory of weak islands. *Syntax and Semantics* 29, 185-209.

Nunes, J. (1995). *The copy theory of movement and linearization of chains in the Minimalist Program*. Doctoral dissertation. University of Maryland at College Park.

_____. (1999) Linearization of chains and phonetic realization of chain links. In: S. Epstein & N. Hornstein (eds) *Working Minimalism*. The MIT Press, Cambridge, Massachusetts.

_____. & J. Uriagereka (2000). Cyclicity and extraction domains. *Syntax* 3, 20-43.

Otsu, Y. (1981). Universal Grammar and syntactic development in children: Toward a theory of syntactic development. Doctoral Dissertation, MIT.

Phillips, C. (2013). On the nature of island constraints I: Language processing and reductionist accounts. In Sprouse, J. and Hornstein, N. (eds.) *Experimental syntax and island effects*, 64-108. Cambridge University Press.

Rizzi, L. (1990). *Relativized Minimality*. The MIT Press, Cambridge, Massachusetts.

Ross, J. R. (1967). *Constraints on Variables in Syntax*. Dissertação de PhD, MIT.

Schulz, P. (2003). *Factivity*: Its Nature and Acquisition. Linguistische Arbeiten 480. Tübingen: Niemeyer.

Stepanov, A. (2001). The end of CED?, in: Megerdoomian, K. & L.A. Bar-el (eds.), *WCCFL 20 Proceedings*, Sommerville, Ma: Cascadilla Press.

Uriagereka, J. (1999). Multiple Spell-Out. In: Epstein, S. & N. Hornstein (eds.) *Working Minimalism*. The MIT Press, Cambridge, Mass., 251-282.

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