EXTRACTION FROM WEAK ISLANDS: ALTERNATIVES TO THE ARGUMENT/ADJUNCT DISTINCTION

Extração de ilhas fracas: alternativas para a distinção argumento-adjunto

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ABSTRACT: This paper focuses on the phenomenon of long-distance dependency involving negative islands and *wh*-islands. The extraction of *wh*-phrases from specific syntactic environments (weak islands) exhibits contrasts in acceptability sometimes explained via the argument/adjunct distinction (Huang 1982; Lasnik and Saito 1984, 1992; Chomsky 1986). We not only show that this phenomenon is not explained in its entirety by this distinction, but also that several other authors have already proposed treatments that are more consistent with the data. The proposals discussed here will be, in particular, Rizzi's (1990) Referentiality, Villata, Rizzi, and Franck's (2016) featural Relativized Minimality and Kroch's (1998) Presupposition oddity account. The three proposals are possible explanations for the phenomenon, since all of them can deal with cases in which there is no unacceptability in the extraction of (so-called) adjuncts, as well as cases in which the extraction of arguments is unacceptable. However, we conclude that the Kroch's analysis via presupposition is better as an explanation of the data as a whole, insofar it captures the acceptability contrasts between extracting manner, reason, time and place adverbs. All of this entails that the argument/adjunct distinction no longer has an explanatory role in the treatment of the extraction from *wh*-islands and negative islands.

KEYWORDS: extraction from weak islands; referentiality; featural relativized minimality; presupposition.

RESUMO: Este artigo toma como objeto o fenômeno de dependência de longa distância de sintagmas em estruturas que envolvem ilhas negativas e ilhas-*wh*. A extração de sintagmas *wh* de ambientes sintáticos específicos (as ilhas fracas) apresenta contrastes de aceitabilidade por vezes explicados via distinção argumento-adjunto (Huang 1982; Lasnik; Saito 1984, 1992; Chomsky 1986). Mostramos não somente que esse fenômeno não é amplamente explicado pela distinção, mas que diversos outros autores já propuseram tratamentos mais coerentes com o que se encontra nos dados. Serão apresentadas, especialmente, as propostas de Referencialidade (Rizzi 1990), Minimalidade Relativizada de traços (Villata; Rizzi; Franck 2016) e estranheza da pressuposição (Kroch 1998). As três propostas são explicações possíveis para o fenômeno analisado, pois conseguem dar conta tanto de casos em que não há agramaticalidade na extração de "adjuntos", quanto de casos em que a extração de argumentos não é aceitável. Entretanto, concluímos que a análise de Kroch via pressuposição dá conta de explicar os dados de modo mais abrangente, uma vez que captura os contrastes entre a extração de predicados de modo, causa, tempo e lugar. Tudo isso evidencia que a distinção argumento-adjunto não tem mais função explanatória no tratamento da extração de ilhas fracas *wh* e negativas.

PALAVRAS-CHAVE: extração de ilhas fracas; referencialidade; minimalidade relativizada de traços; pressuposição.

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INTRODUCTION

This paper focuses on the phenomenon of long-distance dependency involving negative islands and *wh*-islands. Studies on this phenomenon began with Ross (1967), who examined different structural patterns and realized that there were some syntactic environments from which no element could be extracted: he called these environments *islands* and categorized them into five constraints. Ross' constraints were later associated with *strong islands* (sequences from which nothing can be extracted), set in opposition to *weak islands* (sequences from which only some elements can be extracted, but not others) (Cf. Cinque 1990).

(1)   a. John knows the person who wrote that book.

        b. *Which book$_i$ does John know the person who wrote $\_\,_i$?

(2)   a. Bob was wondering whether John met Mary yesterday.

        b. Who$_i$ did Bob wonder whether John met $\_\,_i$ yesterday?

        c. *When$_i$ did Bob wonder whether John met Mary $\_\,_i$?

The structures in (1) are examples of strong islands, since the embedded sentence is a complex NP (a noun with an embedded relative). The structure in (1b) is blocked by the Complex NP Constraint: nothing can be extracted from a sentence dominated by a noun phrase with a lexical head. (2), on the other hand, is an example of a weak island, as it allows the extraction of *who* in (2b), but not of *when* in (2a). The explanation for the acceptability contrast between (2b,c) is traditionally attributed to the argument/adjunct distinction: it is assumed that an argument can be extracted from the embedded clause, keeping the grammaticality of the sentence, while the extraction of an adjunct is allegedly impossible.

Although some influential analyses (cf. Huang 1982; Lasnik and Saito 1984, 1992; Chomsky 1986) rely on the argument/adjunct distinction to explain the acceptability contrasts related to extraction out of weak islands, it has been shown by many authors that this distinction cannot explain the phenomenon as a whole. In this paper, I examine Referentiality (Rizzi 1990), featural Relativized Minimality (Villata, Rizzi, and Franck 2016) and presupposition oddity (Kroch 1998) as concepts that update the discussion on negative island and *wh*-island extraction without resorting to the argument/adjunct distinction in syntax. My purpose is to show that such a

distinction does not explain these phenomena and, therefore, that it must be abandoned (in this context) to give way to theoretical constructs which are more consistent with what is observed in the data.

1 STRONG ISLANDS: ROSS' (1967) CONSTRAINTS

Ross (1967) introduces the concept of syntactic island taking as a starting point Chomsky's (1964b) remarks on the formulation of the relative clause and the question transformations.

(3)   Mary saw the boy walking toward the railroad station.
(4)   a. Who(m) did Mary see walking toward the railroad station?
        b. Do you know the boy who(m) Mary saw walking toward the railroad station?

Chomsky (1964b: 930-931) notes that the structural ambiguity of sentence (3) is undone if a question or a relative clause is formed, as in (4a) and (4b), respectively. On the first interpretation (disambiguated in (4a)), what Mary sees is a walking *event* done by the boy – the object of *see* is the event *x walking toward the railroad station*. The generation of (4a) follows from usual assumptions, since the NP *the boy* is extracted from a sentential structure ($[_S [_{NP}$ the boy] [walking toward the railroad station]]) to the left periphery in order to form a *wh*-question. But on the second interpretation, disambiguated by the relative clause formation in (4b), what Mary sees is *the boy* who was walking toward the railroad station – in this case, the object of *see* is a noun, *the boy*, and *walking toward the railroad station* is just modifying that noun.

The problem raised by Chomsky (1964b) concerns the structure in (4b). Since transformations cannot be ambiguous, the issue is how a transformational grammar of English could yield (4b) since it would be necessary to determine which NP should be extracted: $[_{NP}$ the boy] or $[_{NP} [_{NP}$ the boy] [walking toward the railroad station]]. The same problem does not arise for (4a), since the NP is being extracted from a sentence $[_S [_{NP}]]$, not from another noun phrase $[_{NP} [_{NP}]]$, as in (4b).

In an attempt to solve this issue, Chomsky (1964a: 931) posits a "general condition", later named by Ross (1967: 13) as the A-over-A Principle (A/A):

(5)   The A/A Principle

"[...] 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)."

However, Chomsky (1964a) and Ross (1967) realized that the A/A Principle was too strong. Although it could explain many cases of ungrammaticality due to extraction, it also ended up excluding grammatical sentences, like "*The book$_i$ which I lost the cover of ___$_i$*"[2]. Furthermore, as Boeckx (2012: 5) notes, the Principle is also too weak in other cases, because it doesn't avoid the generation of sequences like "**How nice$_i$ do you have** [*a* ___$_i$ *car*]?"[3], in which an element of a different type/category is extracted from an NP.

Therefore, Ross (1967) dedicates his dissertation to the formulation of five other independent conditions which are supposed to replace the A/A Principle: The Complex NP Constraint, The Coordinate Structure Constraint, The Sentential Subject Constraint, The Pied Piping Convention, and The Left Branching Condition. Below we can see the definition of the first three conditions, followed by Ross' examples:

(6)   The Complex NP Constraint

"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."[4]

(7)   The Coordinate Structure Constraint

"In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct."[5]

(8)   The Sentential Subject Constraint

"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."[6]

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[2] Ross' example (1967: 14-15).
[3] Boeckx's example (2012: 5).
[4] Ross (1967: 127).
[5] Ross (1967: 161).
[6] Ross (1967: 243).

(9)   a. Phineas knows a girl who is jealous of Maxime.

b. *Who$_i$ does Phineas know a girl who is jealous of __$_i$?

(10)   a. He will put the chair between some table and some sofa.

b.*What sofa$_i$ will he put the chair between some table and __$_i$?

c. *What table$_i$ will he put the chair between __$_i$ and some sofa?

(11)   a. That I brought this hat seemed strange to the nurse.

b. *The hat$_i$ which that I brought __$_i$ seemed strange to the nurse was a fedora.

In (9a), an NP phrase with a lexical head dominates the relative clause "who is jealous of Maxime"; (9b) illustrates how the attempt to extract one of the elements (*who*) out of that phrase results in an ungrammatical string, due to the Complex NP Constraint. In (10a), there is a coordinate structure (... *some table and some sofa*); the attempt to extract a coordinate phrase (*what sofa* and *what table*) out of the conjunct, in (10b) and (10c), makes the sequence ungrammatical, by violation of Coordinate Structure Constraint. In (11a), *That I bought this hat* is a sentential subject; when *the hat* is moved out of the subject, the result is ungrammatical, since it incurs a violation of Sentential Subject Constraint.

These conditions restrict the occurrence of certain transformations in specific syntactic environments, so-called *islands*. After Ross' (1967) work, many investigations involving island phenomena were (and have been) conducted, resulting in the discovery of other islands which were not observed by Ross. They were subcategorized into (i) *strong* islands, including the ones predicted by Ross and also the adjunct island, observed by Huang (1982), and (ii) *weak* islands, such as the *wh*-island, the negative island and the factive island (cf. Cinque 1990; Augusto 1998; Szabolcsi 2006).

The example in (12) illustrates a kind of strong island not noted by Ross – namely, an adjunct island:

(12)   a. John slept after reading that paper.

b. *?Which paper$_i$ did John sleep after reading __$_i$?

In the example (12) above, the PP [after reading that paper] is adjoined to the matrix sentence and forms a syntactic environment from which nothing can be

extracted: an adjunct island. For this reason, when trying to extract *which paper*, in (12b), the resulting structure is ungrammatical.

Having briefly summarized Ross' restrictions which launched the research on strong islands, let us turn in the next section to weak islands, which will be the focus of this paper.

2 WEAK ISLANDS

2.1 ARGUMENT EXTRACTION VS. ADJUNCT EXTRACTION

Whereas strong islands are strings from which no constituent can be extracted, weak islands are strings from which only some constituents can be extracted, but not others. The important issue for syntactic theory is to determine exactly which constituents can be extracted. Traditionally, it was considered that the extractable phrases were only arguments, as opposed to adjuncts (Huang 1982; Lasnik and Saito 1984, 1992; Chomsky 1986). *Wh*-islands, negative islands and factive islands are the main instances of weak islands and are exemplified below – (13) and (14) are *wh*-islands, (15) and (16) are negative islands and (17) and (18) are factive islands:

(13)   a. Who did you wonder [whether Mary kissed _]?
        b. *When did you wonder [whether Mary kissed Sue _]?

(14)   a. This is the woman which I was wondering [whether Mary was going to kiss _].
        b. *This is the moment at which I was wondering [whether Mary was going to kiss Sue _].

(15)   a. Who did [no one think that Mary kissed _]?
        b. *When did [no one think that Mary kissed Sue _]?

(16)   a. Who [won't Mary kiss _]?
        b. *When [won't Mary kiss Sue _]?

(17)   a. Who did you regret [that Mary kissed _]?
        b. *When did you regret [that Mary kissed Sue _]?

(18)   a. Which woman did you realize [that Mary kissed _]?
        b. *At which moment did you realize [that Mary was going to kiss Sue _]?

The question that arises is whether the contrast in acceptability is due to the impossibility of extracting an adjunct (*vs.* an argument) or to some other semantic-pragmatic factor – e.g. to the fact that some questions are odd to ask regardless of their syntactic structure. I will discuss below other factors that seem to explain island effects more broadly, beyond the argument/adjunct distinction: Referentiality, featural Relativized Minimality, and presupposition oddity.

2.2 REFERENTIALITY AND FEATURAL RELATIVIZED MINIMALITY

Although it is still relatively common to treat extraction out of weak islands as a phenomenon explained by the argument-adjunct distinction (i.e. arguments can be extracted, adjuncts cannot), it has been shown in the literature that acceptability contrasts found when *wh*-extraction out weak islands takes place stem from other causes. I will present some of these proposals here.

Pesetsky (1987) uses the concept of D(iscourse)-linking, stating that *wh*-elements that are D-linked imply the existence of a set of familiar entities of the type denoted by the nominal expression following the *wh* – *which person*, for instance, refers to a contextually predefined set of people, whereas *who* (a non-D-linked *wh*-element) does not necessarily imply the existence of a predefined set of entities. That is, using a D-linked expression limits the possible answers to a *wh*-question to the members of a set which is contextually established in the discourse. For Pesetsky (1987), only D-linked expressions can be extracted out of weak islands.

A very similar notion is Rizzi's (1990) concept of Referentiality, defined by Cinque (1990: 16) as "the ability to refer to specific members of a set in the mind of the speaker or preestablished in discourse." Rizzi proposes that only referential *wh*-elements carry a referential index that can be left with the trace after movement takes place. Thus, when a referential element moves, it forms a binding chain with its trace, while the trace of a non-referential element, since it doesn't tail a (binding) chain, needs to be governed by a local antecedent[7]. Long movement of non-referential *wh*-elements would, therefore, be blocked by the filled intervening C head, which precludes antecedent government.

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[7] Chomsky's (1986) definition of chain requires the elements of the chain to be coindexed. This aspect of the definition is shared by Rizzi (1990).

According to Cinque (1990), Referentiality and D-linking are similar concepts, although the former is broader and, in fact, includes the latter. Both notions explain the contrast between data like (19) below:

(19)   a. ??What were you wondering how to fix _? (Kroch 1989)
         b. Which car were you wondering how to fix _?

In (19a), a non-referential (or non-D-linked) *wh*-element is extracted from an embedded structure, making the resulting string odd (i.e. not perfectly acceptable); however, in (19b), the constituent which undergoes long movement is *which car*, a D-linked phrase, which refers to a contextually preestablished set of entities. This makes the sentence acceptable. Although the acceptability contrast in these examples is not so sharp, certainly the second sentence is better than the first, even though the two extracted phrases are equally arguments of the verb *fix*.

In an update of Rizzi's Referentiality-based account, Villata, Rizzi, and Franck (2016) propose an explanation *via* featural Relativized Minimality (fRM). The authors analyze the following sentences:

(20)   How do you think John could solve the problem _?
(21)   *How do you wonder whether John could solve the problem _?
(22)   ??Which problem do you wonder whether John could solve _ (in this way)?
(23)   *What do you wonder whether John could solve _ (in this way)?[8]

While the sentence in (20) is acceptable, because *how* is extracted from a non-island configuration, in (21), the adjunct is extracted from a weak *wh*-island, causing, as is traditionally predicted, the ungrammaticality of the structure. In (22) and (23), we would expect to find two acceptable sentences, with no island violations, since the extracted phrases are arguments; however, (22) is only mildly acceptable, while (23) is considered unacceptable.[9] Villata, Rizzi, and Franck's (2016) explanation is *via* fRM: extraction in (22) is more acceptable because the moved phrase is a more referential argument (to which they attribute a complex featural specification), while in (23) it is a bare argument. The authors claim that there may still be a residual role

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[8] Villata, Rizzi, and Franck (2016: 76-77).
[9] I am reporting the judgments of Villata, Rizzi, and Franck (2016), as presented in their paper.

for the argument/adjunct distinction, but they argue in favor of a fRM analysis to capture acceptability contrasts in cases where there is an island violation.

Villata, Rizzi, and Franck (2016: 78) define fRM as follows:

(24)   Featural Relativized Minimality:
        In   . . . X . . . Z . . . Y . . .

        A local relation is disrupted between X and Y when

        a. Z structurally intervenes between X and Y
        b. Z matches the specification in morphosyntactic features of X

        Intervention is defined in hierarchical terms through c-command:

(25)   Z structurally intervenes between X and Y when Z c-commands Y and Z does not c-command X.

Unlike the analysis based on minimality barriers (Chomsky 1986), which presupposes a purely configurational definition, the authors propose that what causes intervention effects is the local relation between the morphosyntactic features of the intervening positions and those of the moved element – the relevant features, in this case, will be those that trigger movement. Locality effects, therefore, cease to be absolute and become relativized to the type of local relation analyzed. Hence, if Z shares its morphosyntactic feature specification with X, the connection between X and Y is broken.

In (20), there is no violation, as there is no [+Q] element intervening in the embedded domain. Examples (22) and (23) are analyzed as follows: in (23), the surface position of *what* is defined by the featural specification [+Q], which defines questions and attracts the *wh*-element; in the embedded sentence, *whether* (Z), an element also carrying the trace [+Q], intervenes between *what* (X) and the trace (Y), breaking the connection between them, thus making the structure impossible. In (22), *which problem* (X) has a complex featural specification, [+Q, +N] (where [+N] defines the lexically specified property of the expression) including the [+Q]

specification of Z; therefore, X and Z only partially share their featural specification, resulting in a weaker violation, which correlates with higher acceptability.

(23')   *What do you wonder [whether John could solve _ (in this way)]?
          [+Q]   [+Q]
            X   Z   Y

(22)   ??Which problem do you wonder [whether John could solve _ (in this way)]?
          [+Q, +N]   [+Q]
            X   Z   Y

Complex featural specification is a way of modeling the previous notion of referentiality. The fRM, therefore, reduces the concept of island to the concept of intervention: phenomena traditionally analyzed as weak island effects (which were attributed to specific syntactic environments) are viewed as intervention effects, which occur in specific syntactic configurations as defined in (24, 25).

2.3 PRESUPPOSITION ODDITY

While Villata, Rizzi, and Franck (2016) offer a syntactic treatment to island (or intervention) effects, Kroch (1998) states that Referentiality has a semantic-pragmatic nature. According to him, long movement of adjuncts or arguments is blocked by the implausibility of the presuppositions they project.

Wh-questions are related to presuppositions in the following way: they are usually analyzed as containing a focus part (corresponding to the *wh*-element) and a presupposed part (corresponding to the portion containing a gap). In other words, the questioned content acts as a kind of focus, which refers to information which is not shared by interlocutors, whereas the remainder of the sentence invokes a presupposition – i.e. it refers to what is already in the conversational background (cf. Chierchia 2003; Quarezemin 2009). Therefore, *wh*-questions, as focus structures, come with presuppositional content – they are triggers for presupposition.

(26)   a. Which candidate did Mary reject?
           b. Mary rejected THIS candidate.

c. It was this candidate that Mary rejected.

The question in (26a) shares the same presupposition with the prosodic focus structure in (26b) and the cleft structure in (26c): namely, the presupposition that Mary rejected a candidate.

Given these assumptions, Kroch (1998) argues that some extractions may be bad due to a semantic-pragmatic factor, regardless of whether the phrase is an argument or an adjunct: some questions are just odd to ask and some statements are odd to make, given the implausibility of their presuppositions.

(27)   a. *How much did Bill wonder whether the book cost? (Kroch 1998)
        b. There is a sum such that Bill wondered whether the book cost that sum.
        (odd presupposition)

According to Kroch, even though the extracted element in (27a) is commonly treated as an argument, the sequence is odd due to a pragmatic problem: the presupposition it projects – namely, (27b) – is implausible.

It is important to note that, since the effect is a pragmatic one, it can be resolved when placed in a proper context. This explains the acceptability of sentences like (28Bb), which are interpreted as *echo-questions*:

(28)   A: We asked whether the book cost ten dollars.
        B: a. You asked whether the book cost *how* much?
        OR   b. *How* much did you ask whether the book cost?

In an echo-question, the speaker asks for information that he believes has already been given before, but that he "lost", or expresses surprise at what was said. Therefore, this structure is accompanied by an ascending intonation and typically contains the *wh*-element *in situ* (as in (28Ba)) — though extraction can also take place with no loss of acceptability (as in (28Bb)). As the question is parasitic on the previous statement (i.e., that statement is part of the given content), the presupposition is always guaranteed in the context, which eliminates the odd character of (27), making extraction possible.

Moreover, as Culicover (2009) shows, echo-questions probably do not have the same semantics as common *wh*-questions:

(29)   What is your name?

(30)   ?Your name is what? (Culicover 2009: 336)

The pattern for canonical questions in English has the *wh*-expression moved to the left periphery position, as in (29). So someone who is genuinely asking for the interlocutor's name will ask the question in (29), with the *wh*-phrase in an A' position. The structure in (30), with *wh in situ*, will only be possible if it is an eco-question.[10]

Putting aside, therefore, the case of echo-questions, the effect of non-acceptability generated by the odd presupposition stands as a plausible explanation for (27). The same rationale predicts acceptable instances of adjunct extraction from weak islands when there is no odd presupposition – which is indeed what we observe:

(31)   a. When their parents are in town next week, I doubt that the twins will attend any lectures. (Pollard and Sag 1994)

b. There is a period next week such that I doubt the twins will attend any lectures during this period. (presupposition)

(32)   a. Without their earmuffs, scarves, mittens, and parkas, I don't think for a moment that the twins will be venturing forth on a night like this. (Hukari and Levine 1995)

b. There are some items of clothing such that I don't think the twins will be venturing forth on a night like this without these items. (presupposition)[11]

In (31a) and (32a), there are two structures that are claimed to constitute negative islands – introduced by *doubt* and *don't*, respectively – and an adjunct being extracted to the initial position. Such structures should be impossible, given the

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[10] Note that extracting the *wh*-expression from the embedded clause in (iBb) below is impossible, although the questioned information is given explicitly in the previous statement:
(i)   A: I think I just saw Albert Einstein at the supermarket. (Culicover 2009: 335)
        B: a. You think you just saw Albert *who*?!
        OR   b. *Who* do you think you just saw Albert __?
[11] The presuppositions in (31b) and (32b) follow the proposal made by Kroch (1998) for amount quantified questions. According to him, the property described in the sentence is necessary to uniquely identify the new entity introduced in the discourse and, therefore, is part of the presupposition.

traditional predictions about weak island extraction; however, the sentences in (31a) and (32a) are perfectly acceptable. Again, the explanation here lies on the plausibility of the presupposition: the presuppositions in (31b) and (32b) are not particularly strange, which makes the extractions of the adjuncts out of the negative islands possible.

2.4 EXTENDING THE CONCEPTS TO FURTHER EXAMPLES

What we can see from the examples (31) and (32) is that the more semantic information the moved item carries (or the more specified is its presupposition, or the more referential the element is, etc.), the more easily it can be extracted, i.e., more acceptable will be the resulting sentence. In this respect, notions like referentiality and plausible presuppositions are partially overlapping.[12]

The possibility of ameliorating sentences *via* plausibility of presupposition can also be seen for cases Dowty (2003) calls "subcategorized adjuncts". These are expressions whose syntactic/semantic categories are commonly associated with adjuncts (e.g. locatives and adverbs) but which are obligatory, since they cannot be omitted without incurring in unacceptability. Dowty (2003: 39) gives the following examples:

(33)   a. The campanile towers over the Berkeley campus/into the sky.

          b. #The campanile towers.

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[12] Adjunct extraction out of *wh*-islands can also be ameliorated, similarly to the extraction of negative structures shown above. Consider first the typical cases. In (i) and (ii) below, we see a contrast of acceptability between sentences (a) and (b). In the former, an argument is extracted from an embedded *wh*-clause (a weak island) and the result is acceptable; at the same time, in the (b) examples, the extraction of an adjunct makes the sequence unacceptable.
(i)   a. What did John wonder [whether Mary cut _]?
          b. ??How did John wonder [whether Mary cut the salmon _]?
(ii)   a. What did you wonder [whether dinosaurs evolved _ during the Cretaceous Period]?
          b. *When did you wonder [whether dinosaurs evolved feathers _]?
However, the difficulty in interpreting the adjunct in the embedded sentence may be due to a processing preference for local attachment (Phillips and Gibson 1997). That is, the parser tends to interpret *how* in (ib) and *when* and (iib) as modifying the verb in the matrix sentence, *wondered*, due to locality – the modifier is linearly closer to the matrix sentence than to the embedded one. But this preference can be disfavored by manipulating the extracted element in a way that favors the interpretation in the embedded clause:
(i)   c. [Which knife] did John wonder [whether Mary cut the salmon with _] ?
(ii)   c. [During which geological period] were you wondering [whether dinosaurs evolved feathers_]?
In (ic) and (iic), *with what knife* and *during which geological period* are not plausible semantic modifiers for the verb *wonder*. Thus, the interpretation in the embedded clause is favored and the resulting sentences are good, even if an adjunct phrase is being extracted.

(34) a. He always treated me fairly.

  b. #He always treated me.

    (OK only with different meaning for *treat*).

(35) a. Johnny behaved badly.

  b. #Johnny behaved.

    (OK only with different meaning for *behave*)

As Dowty states, the fragments *The campanile towers*, *He always treated me*, and *Johnny behaved* are not acceptable on their own (without the locative and manner phrases) – a property associated with arguments[13]. Still, *over the Berkeley campus/into the sky*, *fairly* and *badly* are adverbs, a category usually associated with adjuncts.

According to Rizzi (1990), subcategorized adjuncts should behave as common adjuncts with regards to extraction, since they are not referential. Let us then look at Dowty's sentences and submit the alleged adjuncts to negative and *wh*-island extraction:

-- The campanile towers over the Berkeley campus.

(36) a. *Over what campus did you wonder whether the campanile towers _?

  b. There is a specific campus such that you wonder whether the campanile towers over that campus. (odd presupposition)

(37) a. *Over what campus did no one claim that the campanile towers _?

  b. There is a specific campus such that no one claimed that the campanile towers over that campus. (odd presupposition)

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[13] The literature often associates obligatoriness with complements and optionality with adjuncts: a complement cannot be omitted without making the sentence ungrammatical, while an adjunct is always optional. However, this characterization does not rest on solid ground. Many of the items that are considered complements may undergo ellipsis, and others considered adjuncts (such as adverbs) are mandatory. See, for instance, the examples below from Jackendoff (1977: 58), in which complements undergo ellipsis without compromising the acceptability of the sentence:
(i)   a. John told Bill a lie.
          b. John told Bill.
Likewise, there are examples of adverbs that seem to be mandatory (Culicover: 1997: 159-160):
(ii)   a. Bill worded the letter very carefully.
          b. *Bill worded the letter.
(iii)   a. Mary weighs too much.
          b. *Mary weighs.

For a more detailed discussion of the traditional tests involving the argument/adjunct distinction, including an assessment of optionality, cf. Moura and Miliorini (2018).

-- He always treated me fairly.

(38)   a. *How do you wonder whether he always treated me _?

       b. There is a specific way of treatment such that you wondered whether he always treated me that way. (odd presupposition)

(39)   a. *How did Mary deny that he always treated me _?

       b. There is a specific way of treatment such that Mary denied that he always treated me that way. (odd presupposition)

-- Johnny behaved badly.

(40)   a. *How do you wonder whether Johnny behaved _?

       b. There is a specific way of behaving such that you wondered whether Johnny behaved that way. (odd presupposition)

(41)   a. *How did no one noticed that Johnny behaved _?

       b. There is a specific way of behaving such that no one noticed that Johnny behaved that way. (odd presupposition)

The three sentences, when submitted to the *wh*-island (36a, 38a, 40a) and negative island (37a, 39a, 41a) extraction tests, behave as expected of adjuncts – that is, they yield unacceptable sequences. The explanation, however, need not be the argument/adjunct distinction as suggested by Dowty, because the idea of presupposition oddity extends to these examples as well.

In the "b" examples above, we have the respective presuppositions projected by these sentences, which are in fact odd. The analysis through presupposition oddity gains support by the fact that examples with more plausible presuppositions stop being unacceptable:

-- The campanile towers over the Berkeley campus.

(42)   a. Over what neighborhood in Florence did you wonder whether Giotto's Campanile towers _?

       b. There is a neighborhood in Florence such that you wonder whether Giotto's Campanile towers over that neighborhood. (presupposition)

(43)   a. Over what part of Columbus would no one believe that a campanile like that could tower _?

b. There is part of Columbus such that no one believe that a campanile like that could tower over. (presupposition)

In (42)-(43), sentences structurally analogous to *The Campanile towers over the Berkeley campus* (cf. (33)) are submitted to extraction out of weak islands with a more referential locative and without the implausible presupposition. Note that the resulting sentences are acceptable, as are the examples (31) and (32) discussed earlier. However, Dowty's other two examples of subcategorized adjuncts do not seem to behave in the same manner, even if we modify the sentences in order to project more plausible presuppositions and add referentiality to the extracted element:

-- He always treated me fairly.

(44)   ?In exactly what respectful way were you wondering whether John always treated his parents?

(45)   ??With all the pomp and circumstance that is usually required to treat a queen, no one doubted that John treated Elisabeth.

-- Johnny behaved badly.

(46)   ?With how much contempt for the other characters did the actor ask the director whether he should behave on scene?

(47)   ??In such an outrageous way of behaving in a business meeting, John denied ever having behaved.

One possible explanation for this difference in behavior may be related to the category of the moved item: in (42)-(43), the extracted phrase was a locative, while in (44)-(47), it is an adverbial manner phrase. According to Aoun et al. (1987), locative and temporal adjuncts are referential (like arguments), while manner and reason adjuncts are non-referential. One evidence presented by the authors is that locatives and temporal adjuncts can appear with co-referential pronouns (*here*, *there*, *then*, *now*), but manner and reason adjuncts cannot (i.e. there is no deictic analogue for these semantic roles). For this reason, manner and reason expressions could not undergo long movement.

For Rizzi (1990), the fact that locative and temporal adverbs are referential allows them to also occupy theta-positions, which makes extracting them from weak islands possible. However, because locatives and temporals are adverbs, they remain structurally ambiguous, which allows for their interpretation in both the matrix and the embedded sentences.

Another attempt to deal with this difference in behavior between place/time adverbs on the one hand and manner/reason adverbs on the other is presented in Antonisse (1994 apud Augusto 1998), based on a proposal by Davidson (1980) and Higginbotham (1985; 1988), according to which every verb projects an event variable as an argument in semantic structure. According to Antonisse (1994), the event variable can license unselected locative and temporal adjuncts. However, it is not clear why time and place can be licensed by the event variable, but manner cannot (cf. Moura and Miliorini 2018; Cappelen and Lepore 2005).

Another hypothesis to consider is that manner and reason are categories that do not project existential presuppositions in the same way as place, time or definite descriptions project. One evidence for this is the one presented by Aoun et al. (1987) and cited above: manner and reason do not have anaphoric pronouns. Once we introduce a new entity into the discourse, we can then make reference to it by using a pronoun; if there is no pronoun that can refer to an entity, it's possible that no entity was introduced in the first place. Considering, then, that projecting an existential presupposition is the determinant factor for extraction, even if we build examples with highly referential expressions, the sequences remain unacceptable, as we can see in the contrasts between (48) and (50) on the one hand (place and time) and (49) and (51) on the other (manner and reason):

(48) Given that John is somewhat strange, in what town were you wondering whether John would be most comfortable? (Culicover, personal communication)

(49) ??Given that John is somewhat strange, by which method were you wondering whether John is probably going to learn French faster?

(50) Given that orchids are very fragile plants, at what season were you wondering whether it would be ideal to prune them?

(51)   ??Given that orchids are very fragile plants, because of which gardening tips you've received from your neighbor were you wondering whether to prune them during the summer?

Since (48)-(51) are all equally referential, these contrasts indicate that presupposition plausibility may be more important than Referentiality (or Relativized Minimality) in determining the acceptability of sentences with long movement.[14]

Furthermore, what all of these examples show is that acceptability contrasts involving extraction out of weak islands are not explained by the argument/adjunct distinction. In the cases examined in this paper, I showed that phrases that are typically taken to be adjuncts can be extracted maintaining acceptability; moreover, I also showed that structures can be made unacceptable by the extraction of typical complements out of weak islands.

CONCLUSION

In this paper, I analyzed the phenomenon of long-distance dependency involving negative islands and *wh*-islands. As an introduction to the concept of islands in the literature, I presented Ross' (1967) constraints and mentioned the traditional account of weak islands, which explains the related acceptability contrasts in terms of the argument/adjunct distinction – that is, that only arguments can be extracted (Huang 1982; Lasnik and Saito 1984, 1992; Chomsky 1986).

Subsequently, three other proposals for explaining the phenomenon were discussed, which highlight the impossibility of accounting for the data using only the argument/adjunct distinction. The syntactic-semantic explanation via Referentiality (Rizzi 1990) shows that more referential phrases – that is, those referring to members of a set that is already preestablished in the speaker's mind or in the

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[14] An interesting explanation is given by Oshima (2006: 149), who proposes a scale of extractability from factive islands, where time/place appear as the most extractable, followed by manner (almost impossible) and cause (completely unacceptable). The examples in (ii) are his:
(i) Scale of Extractability:
argument wh-phrases (WHO, etc.) > {WHEN, WHERE} > HOW > WHY
(ii)   a. Who does Max know [that Alice criticized _]?
          b. (?)When does Max know [that Alice took a day off _]?
          c. (?)Where does Max know [that Alice watched a baseball game _]?
          d. ?*How does Max know [that Alice went to San Francisco _]?
          e. *Why does Max know [that Alice insulted Pat _]?
This analysis may extend to negative islands, but closer investigation is needed.

context – leave behind a referential index as they move, enabling a (binding) chain to be formed between the extracted element and its trace. This is, according to Rizzi's proposal, the main factor which makes extraction out of weak islands possible – it is a syntactic explanation, but somehow based on a semantically loaded concept (i.e. referentiality).

Villata, Rizzi, and Franck (2016) discuss, through fRM, cases of acceptability contrasts in argument extraction – though their account naturally extends to adjunct extraction as well, along the lines discussed above. The authors state that only elements that have complex featural specification are extractable. Bare *wh*-expressions, on the other hand, cannot be tolerably extracted out of *wh*-islands, since the intervening element *whether*, which initiates the embedded sentences, carries the same featural specification as the moved bare *wh*-expression, breaking the chain that must form between an A' element and its trace (or copy). That is, in fRM, island effects are reanalyzed under the concept of intervention.

Finally, I discussed Kroch's (1998) proposal, according to which island effects must receive a semantic-pragmatic treatment. He argues that the unacceptable sequences resulting from extraction do not constitute *syntactic* anomalies. For him, these anomalies are derived from the implausibility of the presuppositions projected by the typical sample sentences found in discussions of weak island extractions. When the relevant examples are adjusted so as to project more plausible presuppositions, the extraction of place and time adverbs becomes perfectly acceptable.

Aoun et al. (1987) and Rizzi (1990) argue that temporal and locative adverbs are more referential than reason and manner adverbs, while for Antonisse (1994) only time and place can be licensed by the event variable projected by the verb. However, even though examples (48)-(51) are high in referentiality, extracting manner and reason predicates seems less acceptable then extracting temporal and locative expressions. Thus, since the concept of referentiality (or d-linking or relativized minimality) cannot explain the whole range of phenomena, the presupposition factor appears as a plausible account for the data, if we assume that manner and reason do not project existential presuppositions like time and place do.

We observed, therefore, that ameliorating typical instances of long movement is possible and it allows not only for the extraction of items classified as adjuncts, but also increases acceptability in the extraction of complements. Thus, we conclude that

the argument/adjunct distinction does not explain the possibility of extraction from *wh*-islands and negative islands.

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