ABSTRACT

Title of dissertation: INVESTIGATIONS ON SALVATION AND NON-SALVATION BY DELETION

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Dissertation directed by: Professor Norbert Hornstein
Department of Linguistics

Professor Howard Lasnik
Department of Linguistics

I use salvation and non-salvation by deletion as a window to understand computational and lexical resources in natural languages. I revisit previous findings from the literature and present novel data of repair under ellipsis from Polish and Nupe. Salvation by deletion is then used to analyze verb-echo answers in Brazilian Portuguese, which, I show, require a word order that is not available in the language. The phenomenon is also used to compare two types of approaches to phasal domains with date from Nupe. I show that salvation by deletion does not obtain in cases of intervention in A-movement and head movement locality, which implies that these are derivational constraints. Finally, salvation and non-salvation by deletion are used as a way to distinguish two types of lexical gaps with data from Brazilian Portuguese, Russian and English.

INVESTIGATIONS ON SALVATION AND NON-SALVATION BY DELETION

by

Gesoel Mendes

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Advisory Committee:
Professor Norbert Hornstein, Chair/Advisor
Professor Howard Lasnik, Chair/Advisor
Professor Georges Rey
Professor Juan Uriagereka
Professor Masaya Yoshida

Dedication

To Ana and Heitor. With love.

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Contents

Chapter 1: Introduction

Form and meaning are often seen as two sides of the same coin. In natural languages, however, all the time we stumble into phenomena where it appears that we are facing either *too much form* or *too much meaning*. Examples of the former can be found in agreement. For instance, in the following examples from Brazilian Portuguese, the plural marking spreads through all the words of the sentence without any clear contribution to meaning:

(1) O-s bon-s aluno-s dormira-m felize-s.
the-PL good-PL student-PL slept-3PL happy-PL
'The good students slept happy.'

Examples of the second can be found in ellipsis. In in (2b), also from Brazilian Portuguese, though some portion of the sentence is missing, it receives a complete sentential interpretation.

(2) a. A Maria não vai ver o João, mas o Pedro vai ver o João.
the Mary not will-3SG see the John, but the Peter will-3SG see the John
'Mary won't see John but Peter will see John.'

b. A Maria não vai ver o João, mas o Pedro vai.
the Mary not will-3SG see the John, but the Peter will-3SG
'Mary won't see John but Peter will see John.'

(Brazilian Portuguese)

This dissertation is about ellipsis and more specifically about what we can learn about grammar more generally from it.

In studying ellipsis there are two major question that need to be answered.

1. Is there syntax internal to the ellipsis site?

2. The understood material is identical to some antecedent. Is the relevant kind of identity syntactic (defined over phrase markers or syntactic derivations of some sort) or semantic (defined over semantic representations or computations of some sort)?

(Merchant 2018a)

These questions have been approached in different ways in the literature (see Chomsky 1965; Ross 1969; Keenan 1971; Wasow 1972; Sag 1976; Sag and Hankamer 1984; Dalrymple, Shieber, and Pereira 1991; Lasnik 1995; Chung, Ladusaw, and McCloskey 1995; Merchant 1999; Culicover and Jackendoff 2005; Saab 2009; Tanaka 2011; Chung 2013; Barros 2014; Thoms 2015; Rudin 2019; Ranero 2020, for different proposals; see Merchant 2018a for a review). My own take is that ellipsis requires unpronounced syntactic structure, which, in turn, needs to be in some degree isomorphic with its antecedent (e.g. Chomsky 1965, Ross 1969, Lasnik 1995, Saab 2009, Tanaka 2011 among others).

The first work of breadth on ellipsis within generative grammar is found in Ross 1969 and his discoveries still shape much of the recent literature on the topic. While Ross gave

several arguments that the missing portion of the structure is indeed abstractly represented in regular syntactic terms, some of which we will review in due course, he showed that island effects are mysteriously weakened the island cross by movement is elided:[1]

(3) a. *She kissed a man who bit one of my friends, but Tom doesn't realize **which one of my friends** she kissed [$_{\text{Island}}$ a man who bit *t*].

b. She kissed a man who bit one of my friends, but Tom doesn't realize **which one of my friends**.

In this dissertation, I refer to this phenomenon as *salvation by deletion*. The phenomenon of salvation by deletion implies that the grammar can build the relevant deviant structure and that deviance, in cases of salvation by deletion, resides on a more superficial level and thus does not arise under ellipsis. Like Ross, and much subsequent work, I will use it, as well as lack of salvation by deletion, to probe into the nature of computational resources. Expanding on it, I will also use it to probe into lexical resources.

Let us see two examples I explore in this dissertation in this regard.

I argue, following Kato 2016, that verb-echo answers in Brazilian Portuguese (see (4)) can be generated by a process of verb-stranding clausal ellipsis where the verb moves to a position higher than the subject, despite the fact that such movement is not available if the IP is not elided.

[1] Ross actually marked the sluicing examples in (b) with ??. So far as I know, most speakers find examples like these completely fine.

(4) A: Alguém trouxe açucar?

someone brought-3SG sugar

'Did anyone bring sugar?'

B: *[$_{CP}$ trouxe [$_{IP}$ alguém *t* [$_{vP}$ *t* açucar]]].

[$_{CP}$ brought-3SG [$_{IP}$ someone *t* [$_{vP}$ *t* sugar]]]

'Yes, someone did.'

B′: [$_{CP}$ trouxe ~~[$_{IP}$ alguém *t* [$_{vP}$ *t* açucar]]~~].

[$_{CP}$ brought-3SG ~~[$_{IP}$ someone *t* [$_{vP}$ *t* sugar]]~~]

'Yes, someone did.'

In my analysis the restriction on verb-initial word order in examples like these is a PF constraint, which is thus void under ellipsis (see chapter 3).

One type of non-salvation by deletion that I explore here concerns English modals like *must*, which are often said to be defective as they lack non-finite forms (**can must*, **will must*, **is musting*, **have must(ed)*, **does must*, ...) in contrast with modals like *have to*:

(5) a. I don't have to leave.

b. *I don't must leave.

The contrast between *must* and *have to* is also seen in ellipsis sites:

(6) a. John has to leave, and I do ~~have to leave~~ too.

b. *John must leave, and I do ~~must leave~~ too.

In my analysis the contrast in (6), as well as the one in (5), arises because English does

not have the lexical resources to build the relevant structure. That is, we are facing an instance of non-generation, and therefore ellipsis cannot help (see chapter 5). I also argue that examples like (6b) imply that ellipsis requires unpronounced material that needs to be in some degree isomorphic with the antecedent.

Outline of the dissertation

This dissertation is composed of four self-contained chapters exploring the phenomenon of salvation by deletion in different domains.

Chapter 2: Ellipsis, salvation and non-salvation by deletion. I revisit the logic of salvation by deletion. I present several data from the literature, as well as new data, that suggest that ellipsis requires unpronounced syntactic material and that this material has to be to some degree isomorphic with the antecedent. I then discuss several examples of salvation and non-salvation by deletion drawing from previous works and adding novel data points from Polish and Nupe.

Chapter 3: Verb-echo answers in Brazilian Portuguese: word order and salvation by ellipsis. Salvation by deletion is used to analyze verb-echo answers in Brazilian Portuguese, which, I argue, require a word order that is not available in the language. I conclude that this word order restriction arises at the surface and, thus, violations can be repaired under ellipsis. The analysis is implemented in the framework of cyclic linearization (Fox and Pesetsky 2005a).

Chapter 4: Three case studies. One novel case of salvation by deletion is documented and analyzed in Nupe, which is used to compare two approaches to phasal domains: cyclic linearization (Fox and Pesetsky 2005a) and phase impenetrability condition (Chomsky 2001). I also discuss novel data that shows that both intervention effects in A-movement and head movement locality cannot be repaired by deletion and that these should be analyzed as derivational constraints.

Chapter 5: Salvation and non-salvation of defectiveness under ellipsis. Ellipsis is used to distinguish two types of lexical gaps with data from Brazilian Portuguese, Russian, and English. Bluntly, defectiveness that can be repaired by ellipsis is interpreted as lack of a proper allomorph, whereas defectiveness that cannot be repaired by deletion is interpreted as lack of a proper morpheme. It is argued that ellipsis is a reliable tool to probe into lexical resources.

Chapter 2: Ellipsis, salvation and non-salvation by deletion

In this chapter I present in detail the logic behind salvation and non-salvation by deletion as a window to understanding the nature of constraints on movement. I also discuss some previous results as well as novel data supporting the idea that salvation by deletion is real.

The work on salvation by deletion is based on the premise that ellipsis sites have unpronounced syntactic structure that has to be to some degree isomorphic to its antecedent. Several arguments will be given to justify this premise including some novel data. The strategy then is simple. The salvation by deletion phenomenon implies that the otherwise illicit structure is PF-problematic. Non-salvation by deletion implies that the problem is not PF-related.

In section 2.1, I will provide several arguments that ellipsis sites have regular, though unpronounced, syntax and that some degree of isomorphism between the ellipsis site and its antecedent is required. In section 2.2, I discuss how the phenomenon of salvation by deletion has been interpreted in the literature. In section 2.3, I will present five case studies on different types of locality constraints. In section 2.4, I conclude and briefly present to ways in which island repair can be assigned to PF in a principled way.

2.1 Evidence for unpronounced syntax

In this section, I review several arguments for the existence of unpronounced syntactic structure in ellipsis sites. The arguments are based on grammatical dependencies relating the material outside the ellipsis site to material inside the ellipsis site, and on the observation that the elided material requires some degree of isomorphism with its antecedent.[1]

It is not my intention to make a comprehensive review of the literature. Good overviews on the basic issues in the domain of ellipsis and the type of argumentation used to justify different approaches can be found in van Craenenbroeck and Merchant 2013, Merchant 2018a and Lasnik and Funakoshi 2018. A good portion of the data discussed here, or at least the baseline data, has been extensively discussed in the literature and they are part of many linguists' toolkit, including my own, when examining more complex ellipsis phenomena. The idea that ellipsis sites have unpronounced syntax, however, is still contentious, as well as to what extent the unpronounced material, assuming it is there, has to match the antecedent.[2] It is crucial then to carefully examine the evidence. Reviewing some of these arguments will also provide the reader who is not familiar with the literature on ellipsis with a quick background.

Apart from reviewing the arguments, I make two contributions. First, I expand on Ross's 1969 argument based on agreement to novel data from Polish discussed in Mendes

[1] I will not defend nor discuss here any specific theory of syntactic identity, which has been a topic of intense debate. The reader is referred to Chomsky 1965; Ross 1969; Lasnik 1995; Oku 1998; Saab 2009; Tanaka 2011; Chung 2013; Merchant 2013a,b; Thoms 2015; Rudin 2019; Ranero 2020 and references therein for discussion of several different phenomena and different implementations of the identity condition on ellipsis. I should say though that the ideas expressed in this dissertation are more in line with the approaches in Chomsky 1965, Lasnik 1995, Saab 2009 and Tanaka 2011.

[2] These are independent questions, though related, which I will collapse in the discussion that will come for the sake of exposition.

and Ruda 2019. Second, I present a novel argument for unpronounced syntax based on the behaviour of defective verbs.

2.1.1 Case-matching

The argument for structure in the ellipsis site based on case was first articulated in Ross 1969 and later further developed in Merchant 1999. The main observation is that, in sluicing (IP-ellipsis) the case of the wh-remnant typically matches the case of its correlate in the antecedent clause.

In German, *schmeicheln* 'flatter' assigns dative case to its complement, whereas *loben* 'praise' assigns accusative:

(1) a. Sie wissen nicht, {*wer /*wen **/wem** } er **schmeicheln** will.
they know not {*who.NOM /*who.ACC **/who.DAT** } he **flatter** wants
'They don't know who he wants to flatter.'

b. Sie wissen nicht, {*wer **/wen** /*wem } er **loben** will.
they know not {*who.NOM **/who.ACC** /*who.DAT } he **praise** wants
'They don't know who he wants to praise.'

(adapted from Merchant 1999, p. 123)

Consider now the following examples where the IP introducing the wh-element is not pronounced:

(2) a. Er will **jemandem** schmeicheln, aber sie wissen nicht {*wer
he wants **someone**.**DAT** flatter but they know not {*who.NOM
/*wen **/wem** }.
/*who.ACC **/who**.**DAT** }
'He wants to flatter somebody, but they don't know who.'

b. Er will jemanden loben, aber sie wissen nicht {*wer **/wen**
he wants **someone**.**ACC** praise but they know not {*who.NOM **/who**.**ACC**
/*wem }.
/*who.DAT }
'He wants to praise someone, but they don't know who.'

(adapted from Merchant 1999, p. 122)

We can see that the the case of the wh-element matches the case of its correlate in the antecedent of the omitted IP. Specifically, the case of the wh-element is dependent on the verb inside the ellipsis site. The pattern follows naturally if there is unpronounced structure in the ellipsis site and a requirement that the ellipsis site and its antecedent have to match to some degree.

A related point, which will be important in the subsequent discussion, is that case matching effects rule out the possibility of the ellipsis site having a copular source. In several languages with overt case morphology, copulas require nominative case on the nominal element they introduce. Let us consider some examples from Greek and Polish. In both languages the verb 'to interrogate' assigns accusative case to its complement, whereas a copular source will require nominative case on the wh-element. In the sluicing examples in (3a) and (4a), we can see that the wh-element has to bear accusative case just like its

correlate in the antecedent. It cannot bear the nominative case that would be required if the ellipsis site could be a copular source as shown in (3b) and (4b):

(3) I astinomia anekrine **enan apo tous Kiprious** prota, ala dhen ksero
the police interrogated **one**-ACC **from the Cypriots** first, but not I.know

a. {*pjos **/pjon** }.
{*which-NOM **/which**-ACC }

b. {pjos itan /*pjon itan }.
{which-NOM it.was /*which-ACC it.was }
'The police interrogated one of the Cypriots first, but I don't know which/ which it was.' (adapted from Merchant 1999, p. 170)

(4) Policja najpierw przesłuchała **jednego z Cypryjczyków**, ale nie wiem
police first interrogated **one**-ACC **from Cypriots**, but not I.know

a. {*który **/którego** }.
{*which-NOM **/which**-ACC }

b. {który to był /*którego to był }.
{which-NOM TO it.was/ *which-ACC TO it.was }
'The police interrogated one of the Cypriots first, but I don't know which/ which it was.'

Merchant reports that similar facts hold in Russian, Czech, Slovene, Finnish, Hungarian, Hindi and Basque.

Case-matching effects follow as a theorem if sluicing is a deletion procedure that

requires some degree of isomorphism between the ellipsis site and its antecedent.

It has been reported that case-matching effects also arise in code-switching environments (González-Vilbazo and Ramos 2014; Merchant 2015; González-Vilbazo and Ramos 2018). Consider the following examples of Spanish/German code-switching (German in italics):

(5) a. Juan amenazó a alguien, *aber ich weiß nicht*, {**wen* ***/wem*** } er
Juan threatened someone.ACC but I know not {*who.ACC **/who.DAT** } he
gedroht hat.
threatened has
'Juan threatened someone, but I don't know who Juan threatened.'

b. Juan amenazó a alguien, *aber ich weiß nicht*, {***wen*** */*wem* }
Juan threatened someone.ACC but I know not {**who.ACC** /*who.DAT }
Juan **amenazó**.
Juan **threatened**
'Juan threatened someone, but I don't know who Juan threatened.'

(adapted from González-Vilbazo and Ramos 2018, p. 437)

In (5a), the wh-phrase receives dative case as a complement of the German verb *gedroht* 'threatened', whereas in (5b) it receives accusative case assigned by the Spanish verb *amenazó* 'threatened'. If the IP introducing the wh-element is elided, however, the wh-element can only receive accusative case following the antecedent clause in Spanish:

(6) Juan amenazó **a alguien**, *aber ich weiß nicht*, {***wen*** /**wem* }.
Juan threatened **someone**.ACC but I know not {**who**.ACC /*who.DAT }.
'Juan threatened someone, but I don't know who.'

(adapted from González-Vilbazo and Ramos 2018, p. 437)

This pattern again implies that the identity condition on ellipsis is sensitive to the structural make-up of the antecedent.

Finally, let us consider some cases where case-matching effects apparently do not arise.

Consider first the following examples from Japanese and Uzbek from Fukaya 2012 and Gribanova and Manetta 2016 respectively:

(7) John-wa kinoo **dereka-ni** atta rasii ga, boku-wa **dare** ka siranai
John-TOP yesterday **someone-DAT** met seem but I-TOP **who** Q know.not
'John seems to have met someone yesterday, but I don't know who.'

(adapted from Fukaya 2012, p. 152)

(8) Siz **kim-ga-dir** pul ber-a-siz, lekin
you **some-DAT-one** money give-PRS-2SG but
kim(-ga)-lig-i-ni bil-ma-y-man
who(-**DAT**)-COMP-3SG.POSS-ACC know-NEG-PRS-1SG
'You give money to someone, but I don't know who.'

(adapted from Gribanova and Manetta 2016, p. 635)

The important point is that, in both examples, the wh-element does not bear case

morphology, which is possible elsewhere in the language. Fukaya (2012) proposes that Japanese examples like (7), with wh-remnants, are *not* derived by ellipsis but rather by a clause headed by a null copula and a pro-dropped subject, strategies independently available in the language. Gribanova and Manetta (2016) offers a similar analysis for the Uzbek example in (8). If no ellipsis is implicated, case-matching effects are not expected.

Consider now the following examples from Turkish where the sluice remnant receives nominative, but its correlate, the embedded subject in the antecedent clause, receives genitive case:

(9) Ahmet [**biri-nin** Ankara-ya git-tiğ-i]-ni söyle-di-**∅** ama
Ahmet-NOM [**one-GEN** Ankara-DAT go-COMP-POSS3S]-ACC say-PAST-3S but
{**kim-∅** /*kim-in } bil-mi-yor-um.
{**who-NOM** /*who-GEN } know-NEG-PRES-1SG
'Ahmet said someone went to Ankara, but I don't know who.'

(adapted from Ince 2012, p. 261)

Ince (2012), however, shows that case-matching effects do obtain elsewhere in Turkish:[3]

[3] Ince (2012) also shows that clefts require nominative case on the pivot, like in Greek and Polish.

(10) a. Ahmet-∅ **biri-ne** kitap ver-miş-∅, ama {**kim-e** /*kim-∅ }
Ahmet-NOM **one-DAT** book give-PST-3SG but {**who-DAT** /*who-NOM }
bil-mi-yorum.
know-NEG-PRES-1SG
'Ahmet gave book to someone, but I do not know to who.'

b. Ahmet-∅ **biri-nden** borç-∅ al-mış-∅, ama {**kim-den** /*kim-∅ }
Ahmet-NOM **one-ABL** debt-NOM take-PST-3SG but {**who-ABL** /*who-NOM }
bil-mi-yor-um.
know-NEG-PRES-1SG
'Ahmet borrowed book from someone, but I don't know who from.'

c. Ahmet-∅ **biri-ni** döv-müş-∅, ama {**kim-i** /*kim-∅ }
Ahmet-NOM **one-ACC** beat-PST-3SG but {**who-ACC** /*who-NOM }
bil-mi-yor-um.
know-NEG-PRES-1SG
'Ahmet beat someone, but I don't know who.'

(adapted from Ince 2012, p. 257)

Though I refer the reader to the source for further details, Ince (2012) assumes that the embedded subject receives nominative marking in the embedded clause and that its conversion to genitive, as in the antecedent clause in (9), is contingent on combining the embedded verb with the complementizer. In (9), the relevant combination of verb and complementizer is *git-tiğ-i* 'GO-**COMP**-POSS3S, which results in genitive conversion in *biri-nin* 'one.GEN. Ince (2012) argues that the process that combines the verb with the

complementizer is bled by ellipsis and thus the genitive conversion does not happen and the wh-remnant surfaces as nominative.

Case matching effects thus provide evidence that there is unpronounced syntax in the ellipsis site which is required to be to some degree isomorphic with the antecedent. Apparent counter-examples seem to have a different explanation. Either the structures do not involve ellipsis at all as in Japanese and Uzbek, or a morphological process responsible for case changing is bled by ellipsis as in Turkish.

2.1.2 No new words

I will now present some facts discussed in Chung 2006 that also suggests some degree of structural matching between the ellipsis site and its antecedent.[4]

English and Norwegian are languages that allow preposition stranding, which means that wh-movement out of PPs is possible:[5]

(11) I don't know **who** they're jealous **of** *t*.

(12) Jeg vet ikke **hvem** Per er sjalu på *t*.
I know not **who** Per is jealous on *t*
'I don't know who John is jealous of.'

Notice that, at least in English, the preposition in the example above is a meaningless case marker whose only function is to introduce the complement of the adjective.

Chung (2006), however, observed that if the preposition is not present in the antecedent

[4] Similar facts have already been discussed by Rosen 1976.
[5] Chung (2006) also discussed similar fact in Danish, which I omit here.

it typically cannot be omitted in a sluiced clause:

(13) a. They're jealous of someone, but it's unclear who.

b. They're jealous, but it's unclear **of** who.

c. *They're jealous, but it's unclear who.

(14) a. Per er sjalu på noen, men jeg vet ikke **hvem**.
Per is jealous on someone but I know not **who**.
'Per is jealous of someone, but I don't know who.'

b. Per er sjalu, men jeg vet ikke på **hvem**.
Per is jealous but I know not on **who**
'Per is jealous, but I don't know of who.'

c. *Per er sjalu, men jeg vet ikke **hvem**
Per is jealous but I know not **who**
'*Per is jealous, but I don't know who.'

The pattern follows nicely if there is structure in the ellipsis site and the identity condition on ellipsis cannot allow a preposition that is not in the antecedent to stay inside the ellipsis site.

2.1.3 Argument structure

In this section, we are going to see that ellipsis cannot handle mismatches in argument structure.

Let us start with voice mismatches, a fact first observed in Merchant 1999 and discussed in detail in Merchant 2013b.

The examples in (15) and (16) show that IP ellipsis is not possible if the ellipsis site and its antecedent do not match in voice:

(15) *Voice mismatch I: passive ≺ active*

a. Joe was murdered, but we don't know who murdered Joe.

b. *Joe was murdered, but we don't know who.

(adapted from Merchant 2013b, p. 81)

(16) *Voice mismatch II: active ≺ passive*

a. Someone murdered Joe, but we don't know who Joe was murdered by.

b. *Someone murdered Joe, but we don't know who by.

(adapted from Merchant 2013b, p. 81)

Since, in these examples, the IP that we are trying to elide and its antecedent seem to entail each other and ellipsis is not possible, it seems that ellipsis is sensitive to the structural make-up of the antecedent.

The second type of alternation, also discussed in Merchant 2013b, involves verbs with diathesis alternations, where a given verb has two ways of introducing its complements.

(17) a. They served someone something.

b. They served something to someone.

(Merchant 2013b, p. 99)

In all the examples in (18) the ellipsis site is consistent with the diathesis variant expressed in the antecedent.

(18) a. They served$_1$ the guests something, but I don't know what.

b. They served$_2$ something to the guests, but I don't know what.

c. They served$_1$ someone the meal, but I don't know who.

d. They served$_2$ the meal to someone, but I don't know (to) who(m).

(Merchant 2013b, p. 99)

In (19), on the other hand, where a diathesis switch is required, acceptability decreases considerably.

(19) a. *They served$_1$ someone the meal, but I don't know to whom.

b. *They served$_1$ someone the meal, but I don't know to whom ~~they served$_2$ the meal *t*~~.

(Merchant 2013b, p. 99)

Similar effects also arise with *to embroider*, which also shows a similar type of alternation.

(20) a. They embroidered something with peace signs.

b. They embroidered peace signs on something.

(Merchant 2013b, p. 99)

Here again ellipsis cannot cope with mismatches:

(21) a. *They embroidered something with peace signs, but I don't know what on ~~they embroidered peace signs *t*~~.

b. *They embroidered something on their jackets, but I don't know with what ~~they embroidered their jackets *t*~~.

(On image impression reading of with what, not manner reading.)

(Merchant 2013b, p. 100)

These examples are predicted if there is unpronounced structure in the ellipsis site that has to match to some degree with the structure of the antecedent.

2.1.4 Agreement

Ross (1969) also made the case for unpronounced syntax using agreement. The premise of this argument is that agreement is the result of a syntactic connection between two elements in the structure (Chomsky 1951, 1955, 1957 et seq, see also Béjar and Rezac 2009; Boeckx and Jeong 2004; Nevins 2007; Preminger 2014 for evidence from different phenomena in various languages).[6]

Consider now the following examples where, in the second clause, the element introduced by the copula is omitted.

(22) Some people think there are no such rules, but there {are /*is}.

(adapted from Ross 1969)

(23) a. First, there were bananas available, and then there {weren't /*wasn't}.

[6]Even in frameworks where agreement nodes are inserted in a specific morphological component after syntax has done its work (e.g. Bobaljik 2008), agreement is sensitive to syntactic structure. I believe this does not affect in any sense what I am saying.

b. First, there were going to be bananas available, and then there {*wasn't /weren't}.

(adapted from Merchant 2013a)

(24) a. I didn't think there would be many linguists at the party, but there {were/*was}.

b. I didn't think there would be a linguist at the party, but there {*were /was}.

(adapted from van Craenenbroeck and Merchant 2013)

We can see here that the inflectional morphology on the copula is not accidental. If there is unpronounced syntax in the ellipsis site, agreement can proceed as usual and these examples are predicted straightforwardly.

Since the argument for unpronounced structure in ellipsis based on agreement has played only a marginal role in the discussion about the nature of ellipsis, I would like to present another case, from Polish, where the agreement controller is also inside the ellipsis site. The discussion is based on data presented in Mendes and Ruda 2019, in prep.

The crucial examples will involve a type of elliptical construction in Polish, which, following Holmberg (2016), I will call verb-echo answers, and the phenomenon of closest conjunct agreement, which I return to momentarily.

Verb-echo responses are short replies made by repeating the finite verb of the antecedent clause:

(25) *Verb-echo: question/answer*

A: Czy Jan przyniósł cukier?

if John brought.3MSG sugar

"Did John bring sugar?"

B: Przyniósł.

brought.3MSG

'Yes.'

(26) *Verb-echo: polarity reversal*

A: Jan nie przyniósł cukru.

Jan not brought-3MSG sugar-GEN

"John didn't bring sugar."

B: Przyniósł.

brought-3MSG

'Yes.'

Verb-echo responses are not blind repetitions of the finite verb from the antecedent clause, as the agreement morphology on the verb is updated in the answer depending on the status of the subject:

(27) *Verb-echo: question/answer*

A: Czy przyniosłeś cukier?

if brought-2MSG sugar

"Did you bring sugar?"

B: {Przyniosłem /*przyniosłeś }

{brought-1MSG /*brought-2MSG }

'Yes.'

(28) *Verb-echo: polarity reversal*

A: Nie przyszłaś wczoraj.
not came.2FSG yesterday
"You didn't come yesterday."

B: {Przyszłam/ *przyszłaś }
{came-1FSG /*came-2FSG }
'Yes.'

One could, in principle, analyze verb-echo answers like these as instances of both subject and object pro-drop. Polish is a consistent pro-drop language with rich agreement morphology.[7]

Polish also allows first conjunct agreement, where agreement morphology on the verb can cross-reference the first conjunct of what seems to be a post-verbal coordinated subject (see, a.o., Munn 1993, 1999; Aoun, Benmamoun, and Sportiche 1994, 1999; Johannessen 1996; Citko 2004; Bošković 2009; Marušič, Nevins, and Badecker 2015, for different analyses and discussion of the phenomenon in different languages; see also Nevins and Weisser 2019 for an overview):

[7] In Polish, the availability of object pro-drop seems in general more restricted than the availability of subject-drop (Ruda 2014, 2017) but this is orthogonal to the point I am making.

(29) *First conjunct agreement in Polish*

Do pokoju {**weszła** /weszli } **młoda kobieta** i chłopiec.

to room {**entered-F.SG** /entered-M.PL } **young woman** and boy

'Into the room walked a young woman and boy.'

(adapted from Citko 2004, p. 91).

Mendes and Ruda 2019 are interested in distinguishing between a bi-clausal analysis and a mono-clausal analysis of first conjunct agreement in Polish. In the bi-clausal analysis, inspired by Aoun et al. 1994, 1999 approach to Arabic, first conjunct agreement would arise from clausal coordination plus omission of the verb in the second clause (see (30a)). In this case, agreement is established independently in each clause, but the verb agreeing in the second clause is omitted. On the other hand, in the mono-clausal analysis, coordination obtains at the subject level and not at the clausal level (see (30b)), as in the analysis presented for Polish in Citko 2004. The subject &P is articulated in an X′-structure so that the first conjunct is structurally closer to the inflectional node, I^0.[8] In the following structures, representing both analyses, I omit irrelevant details:

(30) a. $[_{IP}$ V-I^0 NP] & $[_{IP}$ *e* NP] (bi-clausal analysis)

[8]Technically, the ϕ-probe on I^0 searches the structure and finds the first conjunct before having the chance to find the second one.

[8]For resolved agreement, e.g. M.PL in (29), Citko (2004) assumes a structure along the following lines:

(i) $[_{IP}$ V-I^0 $[_{NP}$ pro_{pl} $[_{\&P}$ NP [&' & NP]]]]

Here & is part of a bigger nominal projection headed by a *pro* referring to the element in the conjunction. A similar structure in English would be *They, John and Mary, ...* I refer the reader to Citko 2004 for further discussion.

b. $[_{IP}$ V-I^{0} $[_{\&P}$ NP $[_{\&'}$ & NP]]] (mono-clausal analysis)

Crucially, Mendes and Ruda 2019 note that a verb-echo answer can appear with first conjunct agreement morphology:

(31) *Verb-echo answer*

A: Czy tam na plaży **leżała** Maria *(i) Jan?
if there on beach **lay**-**F.SG** Maria and Jan
'Did Maria and Jan lay there on the beach?'

B: {**Leżała** /leżeli }.
{**lay**-**F.SG** /lay-M.P }
'Yes, they did.' (adapted from Mendes and Ruda 2019, p. 3)

(32) *Polarity reversal*

A: Tam na plaży nie **leżała** Maria *(i) Jan.
there on beach not **lay**-**F.SG** Maria and Jan
'Maria and Jan did not lie there on the beach.'

B: {**Leżała** /leżeli }.
{**lay**-**F.SG** /lay-M.PL }
'Yes, they did.' (adapted from Mendes and Ruda 2019, p. 3)

Importantly, the first conjunct agreement pattern seems inconsistent with subject drop outside verb-echo answers:

(33) A: Tam na plaży nie **leżała** Maria *(i) Jan.

there on beach not **lay-F.SG** Maria and Jan

'Maria and Jan did not lie there on the beach.'

B: *I tam na plaży **spała** *e* do trzciej

and there on beach **slept-F.SG** *e* until 3PM

Intended: 'And on the beach, Maria and John slept until 3pm.

The authors argue that the bi-clausal analysis with syntactic structure in the ellipsis site cannot deliver the correct results. The crucial observation is that the coordinator, which is not optional in Polish coordination as shown in the examples in [A] in (31) and (32), goes away in verb-echo answers and that, under the bi-clausal analysis, the resulting structure would either implicate a coordinate structure constraint violation or non-constituent deletion:

(34) **Leżała** ~~[$_{IP}$ tam na plaży $t_{leżała}$ Maria] i [$_{IP}$ tam na plaży leżał Jan]~~.

lay-F.SG ~~[$_{IP}$ there on beach $t_{lay\text{-}F.SG}$ Maria] and [$_{IP}$ there on beach lay-M.SG Jan]~~

(adapted from Mendes and Ruda 2019, p. 4)

(35) ~~[$_{IP}$ tam na plaży~~ **leżała** ~~Maria] i [$_{IP}$ tam na plaży leżał Jan]~~.

~~[$_{IP}$ there on beach~~ **lay-F.SG** ~~Maria] and [$_{IP}$ there on beach lay-M.SG Jan]~~

(adapted from Mendes and Ruda 2019, p. 4)

As we will see in the following subsection, there is good evidence that ellipsis can repair locality violations. Resorting to repair by deletion, however, does not help much here, since

it would be unclear why the verb in the second clause could not be the one retained in the verb-echo answer.

(36) *__Leżał__ ~~[$_{IP}$ tam na plaży leżała Maria] i [$_{IP}$ tam na plaży $t_{leżał}$ Jan]~~.

__lay-M.SG__ ~~[$_{IP}$ there on beach lay-F.SG Maria] and [$_{IP}$ there on beach $t_{lay\text{-}M.SG}$ Jan]~~

Even if we concede that non-constituent deletion is possible, this does not help much either for similar reasons. Specifically, it would be unclear why the verb in the second clause could not be the one surviving deletion.

(37) *~~[$_{IP}$ tam na plaży leżała Maria] i [$_{IP}$ tam na plaży~~ __leżał__ ~~Jan]~~.

~~[$_{IP}$ there on beach lay-F.SG Maria] and [$_{IP}$ there on beach~~ __lay-M.SG__ ~~Jan]~~

The bi-clausal analysis would have to make a further stipulation to account for the omission of the coordinator. The mono-clausal analysis with deletion, however, can deliver the correct results, since the coordinator will be unavoidably inside the ellipsis site:

(38) __Leżała__ ~~[$_{IP}$ tam na plaży $t_{leżała}$ [$_{\&P}$ Maria [$_{\&'}$ i Jan]]]~~.

lay-F.SG ~~[$_{IP}$ there on beach $t_{lay\text{-}F.SG}$ [$_{\&P}$ Maria [$_{\&'}$ and Jan]]]~~

In this analysis the controller of the agreement on the verb is inside the ellipsis site. The mismatch between the agreement morphology, feminine singular in the testing examples cross-referencing *Maria*, and the interpretation of the subject, which includes not only *Maria* but also *Jan*, follows naturally. Without abstract syntax in the ellipsis site, it is hard to see how this pattern could be accounted for.

2.1.5 Pluralia tantum

Merchant (2018a) presents an argument for abstract syntax based on the interaction between agreement and NP-ellipsis with nominals that have *pluralia tantum* associates. Consider the following baseline examples:

(39) a. Beth's wedding {was /*were} in Bond Chapel, and Rachel's wedding {was/ *were} in Rockefeller Chapel.

b. Beth's nuptials {were /*was} in Bond Chapel, and Rachel's nuptials {were/ *was} in Rockefeller Chapel.

We can see that *wedding* triggers singular agreement on the verb, whereas its *pluralia tantum* associate *nuptials* triggers plural agreement. Under NP-ellipsis, we can see that the morphology cross-referencing the elided NP has to match that of the antecedent:

(40) a. Beth's wedding was in Bond Chapel, and Rachel's *was/*were* in Rockefeller Chapel.

b. Beth's nuptials were in Bond Chapel, and Rachel's *were/*was* in Rockefeller Chapel.

The pattern can be explained if ellipsis sites have hidden syntactic material that needs to be isomorphic with the antecedent.

2.1.6 Warner's effects

In English, *be* behaves differently from main verbs in VP-ellipsis. VP-ellipsis headed by a bare main verb is insensitive to the tense morphology attached to the correlate verb in the antecedent, whereas ellipsis of bare *be* is sensitive to the form of its antecedent (Warner 1986; Lasnik 1995).[9]

The behaviour of main verbs can be seen in the examples in (41a) and (41b). VP ellipsis is possible even when the antecedent verb has a suppletive form:

(41) a. John slept, and Mary will ~~sleep~~ too.

b. John left, and Mary will ~~leave~~ too.

On the other hand, *be* can only be omitted if the omitted verb fully matches the antecedent:

(42) a. John won't **be** here, but Mary ~~**be** here~~ will.

b. *John **was** here, and Mary will ~~**be** here~~ too.

c. *John **was** being obnoxious, and Mary will ~~**be** obnoxious~~ too.

According to Lasnik 1995 this arises because auxiliary verbs come inflected from the lexicon, while inflected main verbs are assembled in the course of the derivation from syntactically independent pieces (including suppletive forms). If there is structure in the ellipsis which can only be elided if an isomorphic antecedent is provided by the context, this facts are easily explained.

[9] Warner 1986 and Lasnik 1995 also discuss some similar facts with the auxiliary *have*, which I omit here.

2.1.7 Lexical gaps

The final argument I will provide for unpronounced structure is based on defective verbs. These will be dealt with in more detail in the last chapter of this dissertation, where more examples of this type will be given.[10]

In English, modals verbs like *must* and *can* lack non-finite forms (**can must*, **will must*, **is musting*, **have must(ed)*, **does must*, ...).

Observe the following examples:

(43) a. I have to leave.

b. I must leave.

If *must* receives a deontic interpretation in (43b), the examples in (43b) and (43a) are synonymous. Now, since *must* lacks non-finite forms, but *have to* does not, *must* cannot appear right after *don't*, a position that requires a bare form, but *have to* can appear in such a position:

(44) a. I don't have to leave.

b. *I don't must leave.

In the ellipsis site we seem to find the equivalent contrast:

(45) a. John has to leave, but I don't ~~have to leave~~.

b. *John must leave, but I don't ~~must leave~~.

[10]There we will also see a different type of defective verb which *can* appear in the ellipsis site.

(46) a. John has to leave, and I do ~~have to leave~~ too.

b. *John must leave, and I do ~~must leave~~ too.

If the ellipsis site requires unpronounced structure that is isomorphic with the antecedent, (46b) and (46b) are ruled out because the grammar of English cannot provide such a structure. If no structure is required in the ellipsis site, it is unclear why the contrast between *must* and *have to* would obtains in (45) and (46).

2.1.8 Summary

In this section, I reviewed several arguments for unpronounced syntax in the ellipsis site. We saw two cases where material outside the ellipsis site can establish a grammatical relation with material properly contained in the ellipsis site, namely case marking and agreement. Furthermore, case matching effects also imply that the ellipsis site has to be to some degree isomorphic with the antecedent. The other phenomena discussed here showed that even in cases where no grammatical relations relate material outside the ellipsis site and material properly contained in the ellipsis site, the elided material is still required to be isomorphic with the antecedent. This was demonstrated with *No new words*, argument structure mismatches, NP-ellipsis involving *pluralia tantum* nouns, Warner's effects and lexical gaps.

With this background, I now consider previous results on the *salvation by deletion* phenomena.

2.2 Locating salvation by deletion in the grammar

Ross (1969) was the first to observe that ellipsis seems to ameliorate island violations. Consider the following examples presented by Ross:

(47) *Complex NP Constraint, noun complement*

a. *I believe the claim that he bit someone, but they don't know who I believe the claim that he bit

b. (??)I believe the claim that he bit someone, but they don't know who

(48) *Coordinate Structure Constraint*

a. *Irv and someone were dancing together, but I don't know who Irv and were dancing together

b. (??)Irv and someone were dancing together, but I don't know who.

(49) *Complex NP Constraint, relative clause*

a. *She kissed a man who bit one of my friends, but Tom doesn't realize which one of my friends she kissed a man who bit

b. (??)She kissed a man who bit one of my friends, but Tom doesn't realize which one of my friends.

(50) *Sentential Subject Constraint*

a. *That he'll hire someone is possible, but I won't divulge who that he'll hire is possible

b. (??)That he'll hire someone is possible, but I won't divulge who.

The examples above show that the island effects that we see in the examples in (a) do not arise in the sluices counterparts in (b). I will call this finding Ross's generalization:

(51) *Ross's generalization*

Deviance arising from movement across an island domain decreases if that island does not appear at the surface.

It is important to note that if there is no syntactic structure in the ellipsis site, there is no reason to expect island effects to arise in the examples above. We have reviewed several arguments that this is not the correct way to go. Ross's generalization thus must be taken as revealing of the nature of island constraints in some way.

Ross concluded from the paradigm above that islands are global derivational constraints, meaning that they need to refer to different stages of the derivational history (Lakoff 1970a, 1972; Postal 1972). Island effects would then be dependent on whether an island has been crossed and if the relevant island node is present at the surface.

In the classic theory of Chomsky 1955, 1957, the transformational component of grammar is understood as a Markovian process. That is, the transformational component is an ordered list of transformations. The application of a transformation depends on three factors: its place in the list, its status as obligatory or optional, and its structural description. In this system, rules can interact, but only indirectly. That is, the application of a given transformation could change the phrase marker introducing or removing strings that would satisfy the structural analysis of a later transformation. For instance, consider the following examples in (52b), which share (52a) in their derivational history (irrelevant details omitted):

(52) a. Mary studied last night, and John -ed study too.

b. (i) Mary studied last night, and John studi-*ed* too.

(ii) Mary studied last night, and John *did* ~~study~~ too.

In (52b-ii), VP-ellipsis *bleeds* the application of Affix Hopping by removing the verb that would otherwise host the affix. At the same time VP-ellipsis *feeds* do-support, combining *do* with the orphan affix.

The view on islands in Ross 1969 is more powerful than this. The transformational component has memory in the sense that it keeps track of the derivational history to establish if the constraint is to apply and how.[11]

Chomsky (1972) avoids global derivational constraints by suggesting that movement can indeed cross islands, generating deviant outputs. The island boundary is marked with the diacritic # and structures with this diacritic are filtered out at the surface structure through an output constraint (see (53a)). Thus, if the portion of the structure containing # is removed via deletion, the structure is no longer filtered out (see (53b)):

(53) a. She kissed a man who bit one of my friends, but Tom doesn't realize which one of my friends she kissed [$_{NP\#}$ a man who bit *t*]

b. She kissed a man who bit one of my friends, but Tom doesn't realize which one of my friends ~~she kissed [$_{NP\#}$ a man who bit *t*]~~

The idea of output conditions associated with the diacritic # already appears in Chomsky (1965, p. 138), where, to my knowledge, the first salvation by deletion analysis is hinted

[11] To be fair, there is one transformation in Chomsky 1957 that has exactly this property. Namely, the application of wh-fronting requires the application of subject auxiliary inversion (e.g. *What was John doing?*/ **What John was doing?*).

at. Let us briefly consider Chomsky's reasoning, at least as a historical note. He is concerned about deep structures like the ones in (54a) and (54b) regarding the relative clause transformation.[12]

(54) a. Mary saw [$_{NP}$ **the professor** [$_{S}$# **the professor** arrived #].

b. Mary saw [$_{NP}$ **the professor** [$_{S}$# **the student** arrived #].

Here, # marks clausal boundaries. These symbols are introduced with the symbol S in the base component (e.g. #⌒S⌒#). The relative clause transformation would be able to delete *the professor* in (54a), but not *the student* in (54b) under identity with the head of the NP hosting the relative clause.[13] While, in (54a), *the professor* finds its match outside the relative clause, *the student*, in (54b), does not, preventing the relative clause transformation from applying. To account for the fact that (54b) would not give rise to a well formed surface structure, Chomsky suggests that the relative clause transformation removes the # from the embedded clause and that structures bearing # is filtered out at the surface:

(55) a. Mary saw [$_{NP}$ **the professor** [$_{S}$ **who** arrived].

b. *Mary saw [$_{NP}$ **the professor** [$_{S}$# **the student** arrived #].

Here is the relevant quote:

> *We can make this observation precise, in this case, by defining the relative clause transformation in such a way that it deletes the boundary symbol # when it applies. Thus if its application is blocked, this symbol will remain in*

[12]This discussion in Chomsky 1965 is part of a larger argument about the elimination of generalized transformations, the introduction of recursion in the base, and the principle of the cycle.

[13]More precisely, in Chomsky 1965, deletion requires *non distinctness*.

> *the string. We can then establish the convention that a well-formed surface structure cannot contain internal occurrences of #. Such occurrences will indicate that certain transformations that should have applied were blocked. The same (or similar) formal devices can be used in a variety of other cases.*
>
> (Chomsky 1965, p. 138)

In Chomsky's 1972 analysis of Ross's generalization, islandhood is thus factored out into two parts. Specifically, movement across an island is possible, but it creates a surface problem. This analysis also takes into account different steps of the derivation, but, differently from what is proposed by Ross, this relation is done indirectly. The output constraint is a representational constraint, not a global derivational constraint as proposed by Ross. The diacritic allows the system to keep track of movement across island domains in a representational way, without actually referring back to the derivational history.

This move represents three major ideas that shaped much of the research in the following years and which will be important to the subsequent discussion on the nature of locality constraints on movement.

The first is the use of representational *filters* or *output conditions*, explored in different ways in Ross 1967, chapter 3 and Perlmutter 1968. The use of surface filters, explored in detail in Chomsky and Lasnik 1977, has developed into one of the core ideas in *government and binding* and *minimalist* syntax (e.g. Case Filter, That-trace, Principle of Full Interpretation, Binding Conditions, Bare Output Conditions). The second idea, closely related to the first, is the use of representational devices introduced in the course of the derivation which allowed derived representations to keep track of the derivational history. The main innovation here, of course, was the concept of *trace* (Wasow 1972; Chomsky

1973). More sophisticated devices became popular in the 80's and in early minimalism (see Lasnik and Saito 1984, 1992; Chomsky 1991 on the γ-marking algorithm and the use of the *-feature to mark locality violations).

The use of traces and diacritics to mark locality violations became somewhat suspicious in the minimalist era, under Chomsky's 1995 programmatic *inclusiveness condition*, which basically requires that the computational system be allowed to operate only with lexical items. Chomsky 1995 replaces the notion of trace with the idea that movement creates copies. The introduction of diacritics to mark locality violations is also criticized in Kitahara (1999).[14] The criticism based on the inclusiveness condition depends however on what we take lexical items to be. Lasnik (2001b, fn.9) points out that there is an easy technical solution to Kitahara's objection: *Everything is 'born' with a ✓. When a violation occurs, the ✓is erased. A representation with an item lacking a ✓is unacceptable.*. The *-feature is still used in several works on salvation by deletion to keep track of illicit movements (Lasnik 2001b; Merchant 2008; Bošković 2011) with different implementations. The main question is not related to the inclusiveness condition, but what exactly is the nature of locality domains.

In the rest of this chapter I review in detail several cases of Ross's generalization as well as some alternative analyses that have been proposed in the literature.[15] The outcome conclusion which I will draw is that salvation and non-salvation by deletion is real and that ellipsis is a reliable tool to investigate the nature of locality constraints. I will then put on the table two views on salvation by deletion that put the burden on linearization, doing

[14] See also Lakoff 1972.

[15] I will not discuss stripping, sprouting, the relation between *v*P-ellipsis and sluicing, and complex NP islands. Some of these are addressed in Fox and Lasnik 2003, Nakao 2009, Nakao and Yoshida 2006 in a manner consistent with the discussion I provide in this section. An interesting investigation on the complex NP island and how it generalizes to other categories except the verb phrase is offered in Bošković 2015.

away with the need of the *-features for islands.

2.3 Five case studies

2.3.1 Relative clauses and Adjunct Islands

Consider the following examples from Merchant 1999 exemplifying amelioration of islands under sluicing:

(56) a. (i) *Guess which (Balkan language) they hired someone who speaks!

(ii) They hired someone who speaks a Balkan language – guess which!

b. (i) *Guess how many (languages) they hired someone who speaks!

(ii) They hired someone who speaks a lot of languages – guess how many!

(adapted from Merchant 1999, p. 285)

If salvation by deletion is possible, the ellipsis site in examples like these could have the following representation:

(57) a. They hired someone who speaks a Balkan language – guess which ~~[they hired someone who speak *t*]~~!

b. They hired someone who speaks a lot of languages – guess how many ~~[they hired someone who speak *t*]~~!

Merchant (1999), however, proposed that repair in such examples is illusory. Specifically, the ellipsis site contains a short source corresponding basically to a sub-portion of the antecedent:

(58) a. (i) They hired someone who speaks a Balkan language –
guess which [she speaks *t*]!

(ii) They hired someone who speaks a Balkan language –
guess which ~~[she speaks *t*]~~!

b. (i) They hired someone who speaks a lot of languages –
guess how many [he speaks *t*]!

(ii) They hired someone who speaks a lot of languages –
guess how many ~~[he speaks *t*]~~!
(adapted from Merchant 1999, p. 286)

He also notices that in some cases this type of short source does not suffice. Consider the following examples:

(59) a. *Which language do they want to hire someone who speaks *t*?

b. They want to hire someone who speaks a Balkan language, but I don't know which.

(Merchant 1999, p. 295)

Here, the type of short sources considered for the previous examples does not provide the intended interpretation:

(60) #They want to hire someone who speaks a Balkan language, but I don't know which he speaks.

Merchant suggests that movement across an island boundary could still be circumvented,

without resorting to repair, if the ellipsis site could contain a modal verb, which would make available the correct interpretation of the pronoun through modal subordination (Roberts 1989):

(61) They want to hire someone who speaks a Balkan language, but I don't know which ~~she *should* speak *t*~~.

Notice that this requires either relaxing the identity condition or taking it to be semantic instead of syntactic, as Merchant does.[16] The danger here is that this conflicts with the evidence for isomorphism. Particularly concerning in the case of sluicing is the case-matching effects.

Merchant also argues that, when short sources are controlled for, island effects arise. He provided the following examples:

(62) a. *They didn't hire anyone who speaks a Balkan language, but I don't remember which she speaks.

[16] Merchant's identity condition is based on mutual entailment:

(i) e-GIVENness

An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo ∃-type shifting,
1) A entails F-closure(E), and
2) E entails F-closure(A)

(adapted from Merchant 1999, p. 45)

(ii) A constituent α can be deleted only if α is e-GIVEN.

(adapted from Merchant 1999, p. 45)

See also Rudin 2019 for a proposed identity condition on ellipsis that is able to capture case matching effects at the same time that it might allow the short sources envisioned by Merchant 1999. The basic idea is that isomorphism is required up to *v*P. Elements on the IP layer are allowed to mismatch. See though Ranero 2020 for a criticism Rudin's approach.

b. *They didn't hire anyone who speaks a Balkan language, but I don't remember which.

(Merchant 1999, p. 289)

(63) a. *They hired no people who spoke a lot of languages- guess how many they spoke!

b. *They hired no people who spoke a lot of languages - guess how many!

(adapted from Merchant 1999, p. 289)

Short sources are blocked in these examples because *no people* in (62b) and the negative polarity item *anyone* in (63b) do not introduce discourse referents that could be picked up by the pronoun in the short source. If island violations could be saved by deletion, Merchant reasons, we would expect these examples to be good.

Lasnik (2001b), however, presents several examples where short sources are not available and yet amelioration obtains. In the examples Lasnik offers, the indefinite determiner in the correlate is replaced by *a certain*, which facilitates the specific interpretation of the correlate, improving acceptability:

(64) a. *I can't remember which Balkan language [no-one had a student who worked on *t*].

b. No-one had a student who worked on a certain Balkan language, but I can't remember which (Balkan language).

c. *No-one had a student who worked on a certain Balkan language, but I can't remember which Balkan language she worked on. *(putative short source)*

(adapted and expanded from Lasnik 2001b, p. 15)

(65) a. *I don't remember which Balkan language [they didn't hire anyone who speaks *t*] *(control example)*

b. ?They didn't hire anyone who speaks a certain Balkan language, but I don't remember which (Balkan language).

c. *They didn't hire anyone who speaks a certain Balkan language, but I don't remember which (Balkan language) she speaks. *(putative short source)*

(adapted and expanded from Lasnik 2001b, p. 15)

Consider also the following example presented by Barros, Elliott, and Thoms 2014, where we can see the same effect:

(66) a. *Guess which one [they hired no-one who speaks *t*]!

b. ?They hired no-one who speaks a certain Balkan language – guess which one!

c. *They hired no-one who speaks a certain Balkan language – guess which one she speaks! *(putative short source)*

(adapted and expanded from Barros et al. 2014, p. 9)

Here short sources fail. It seems that salvation by deletion is real.

Let us now consider two alternative approaches to the repair phenomenon, namely, copular sources and resumption within the ellipsis site.

Erteschik-Shir (1973, p. 170) suggests that islandhood could be evaded in the ellipsis site if the ellipsis site is allowed to have a copular source (see also Barros et al. 2014). In the examples I have just discussed this would result in the following representations:

(67) No-one had a student who worked on a certain Balkan language, but I can't

remember which (Balkan language) ~~it was *t*~~

(68) ?They didn't hire anyone who speaks a certain Balkan language, but I don't remember which (Balkan language) ~~it was *t*~~.

(69) ?They hired no-one who speaks a certain Balkan language - guess which one ~~it was *t*~~!

Here the danger of losing the case-matching effects is quite salient. If ellipsis sites do not need to be isomorphic with the antecedent we lose our explanation for the case matching effects. I believe this is the most compelling reason to reject this approach.

We can also, however, make a more direct argument with a language with overt case morphology and where a potential copular source would require nominative case morphology on the wh-element like Polish.[17] I will apply the test in Polish. The following examples provide a baseline:

(70) *Relative clause island*

a. Wydział nie zatrudnia nikogo, kto mówi pewnym językiem
department not hires anyone who speaks certain-INSTR language-INSTR
słowiańskim.
Slavic-INSTR
'The department doesn't hire anyone who speaks a certain Slavic language.'

b. Którym językiem słowiańskim wydział nie zatrudnia nikogo,
which-INSTR language-INSTR Slavic-INSTR department not hires anyone

[17] See also Lasnik 2001b for discussion of other examples in English involving reconstruction effects that do not fit with the copular source approach.

kto mówi?

who speaks

'Which Slavic language does the department not hire anyone who speaks?'

As shown below, in Polish we find the same amelioration effect under ellipsis - compare (70b) and (71b). Furthermore, (71b) shows that the copular source cannot be responsible for the redemption effect.[18]

(71) *Island amelioration under ellipsis:*

a. Wydział nie zatrudnia nikogo, kto mówi pewnym językiem
department not hires anyone who speaks certain-INSTR language-INSTR
słowiańskim. Zgadnij którym (językiem słowiańskim)!
Slavic-INSTR Guess-2SG which-INSTR language-INSTR Slavic-INSTR
'The department doesn't hire anyone who speaks a certain Slavic Language - Guess which Slavic language!'

b. Wydział nie zatrudnia nikogo, kto mówi pewnym językiem
department not hires anyone who speaks certain-INSTR language-INSTR
słowiańskim. Zgadnij który *(to język słowiański)!
Slavic-INSTR Guess-2SG which-NOM TO language-NOM Slavic-NOM
'The department doesn't hire anyone who speaks a certain Slavic Language - Guess which Slavic language it is!'

[18] Similar facts have been reported for Icelandic (Wood, Barros, and Sigurdson 2016) and German (Barros et al. 2014).

Notice that other short sources are also not available here:

(72) Wydział nie zatrudnia nikogo, kto mówi pewnym językiem
department not hires anyone who speaks certain-INSTR language-INSTR
słowiańskim.
Slavic-INSTR
'The department doesn't hire anyone who speaks a certain Slavic Language.'

a. #... Zgadnij którym językiem słowiańskim {ona /on /*e*} mówi!
... guess-2SG which-INSTR language-INSTR Slavic-INSTR {she /he /*e*} speaks
'Guess which Slavic language she/he/null-subject speaks!'

b. #... Zgadnij którym językiem słowiańskim nikt nie mówi!
... guess-2SG which-INSTR language-INSTR Slavic-INSTR nobody not speaks
'Guess which Slavic language nobody speaks!'

Let us now consider resumption as the source of the repair effects. To my knowledge, the interaction between resumption and islands was first discussed in Ross 1967, p. 426 and p. 432-433. Ross (1967) divided reordering transformations in two types, *copying* and *chopping* rules. Basically, copying rules leave a pronominal copy in the base position of the moved element, whereas in chopping rules the base position of the reordered element is left empty. According to him, only chopping rules are sensitive to islands. The following minimal pair illustrate the effect.

(73) a. *What play$_1$ does he want to interview the woman who wrote t_1?

b. What play$_1$ does he want to interview the woman who wrote **it**$_1$?

(adapted from Merchant 1999, p. 289)

If resumption can ameliorate island effects, it might be able to do so inside ellipsis sites. The resumption analysis has been proposed in Sauerland 1997, Wang 2006 and Boeckx 2008.

Before proceeding, it should also be pointed out the claim that resumption ameliorates island violation is contentious. While several theoretical oriented works have claimed that resumptive pronouns can ameliorate island effects (Kroch 1901; Chomsky 1986b, among others), several experimental work in the psycholinguistic literature have claimed otherwise (Alexopoulou and Keller 2007; Polinsky, E., Morgan, Xiang, and Heestand 2013, among others). Recently, Yoshida, Potter, and Hunter 2018 have provided experimental evidence that amelioration is found both in acceptability tasks and production tasks. Here I will not discuss these works in any detail.[19] In the next paragraphs I entertain, and reject, resumption as the possible source of island repair effects under sluicing.

Despite the attractiveness of the resumption analysis of island amelioration under ellipsis, Merchant 1999 points out serious problems with this approach. I will mention one.[20] He observes that there are several languages that do not have a resumption strategy but have island repair effects under ellipsis. Here is a data set from German exemplifying this observation:

[19] See McCloskey 2017 for a review of several issues arising the in the study of resumption and English and other languages with more consistent resumption strategies.

[20] Merchant (1999)'s evaluation and rejection of the resumptive approach is much more detailed than what I am able to describe here. I refer the reader to Merchant (1999, section 4.3) for further details.

(74) *{Welchem Gefangenen$_1$ /wem$_1$} will sie jemanden finden, der
{which.DAT prisoner /who.DAT} wants she someone find who
ihm$_1$ geholfen hat?
him.DAT helped has
'{Which prisoner /who} does she want to find someone who helped him?'

(adapted from Merchant 1999, p. 183)

(75) Sie will jemanden finden, der einem der Gefangenen geholfen hat, aber
she wants someone find who one.DAT of.the prisoners helped has but
ich weiß nicht, welchem.
I know not which.DAT
'She wants to find someone who helped one of the hostages, but I don't know which.'

(adapted from Merchant 1999, p. 184)

In (74), we see that the use of a pronoun does not ameliorate the island effect. Yet, in (75), we see that the island repair effect under ellipsis obtains nonetheless. Notice that while Merchant 1999, section 4.3 took these data to militate against the resumption approach, he also argued in section 5.4, in its final chapter, that ellipsis sites can have short sources and that there is no repair of extraction out relative clause islands as shown above. This apparent inconsistency has been pointed out in Lasnik 2005b, a review of the published version of Merchant 1999. Since we have rejected the short sources and the source of amelioration effect under sluicing, I feel comfortable in using this argument against resumption.

One question is whether resumption could be the source of repair in English or at least

one source of repair in English. That seems unlikely. Yoshida and Rottman 2013 observe that resumption blocks idiomatic interpretation:

(76) a. Mary was worried about the strings that Bill said that John pulled to get his position.

b. *Mary was worried about the strings that Bill is angry because John pulled {them/∅}.

(expanded from Yoshida and Rottman 2013, p. 660)

The authors also show that amelioration effects arise even when the wh-element is part of an idiom chunk inside an island:

(77) a. *Which strings does Mary not criticize anyone who pulls {them/∅} to be successful?

b. Mary does not criticize anyone who pulls certain strings to be successful, but I will not tell you which (strings).

(adapted and expanded from Yoshida and Rottman 2013, p. 664)

Notice that this example has the same skeleton as the examples provided in Lasnik 2001b, which we saw above, to control for short sources.

Let us now consider clausal/*v*P adjuncts. Observe the following examples provided by Merchant 1999:

(78) a. *Ben left the party because one of the guests insulted him, but wouldn't tell me which (of the guests) he left the party [because *t* insulted him].

b. Ben left the party because one of the guests insulted him, but wouldn't tell me which (of the guests).

(adapted from Merchant 1999, p. 119)

(79) a. *Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which Ben will be mad [if Abby talks to *t*].

b. Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which.

(adapted from Merchant 1999, p. 119)

While a short source could be used in the first example, it does not give the appropriate interpretation in the second one:

(80) Ben left the party because one of the guests insulted him, but wouldn't tell me which (of the guests) ~~insulted him~~.

(81) #Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which ~~he talks to~~.

Merchant (1999, p. 301) suggests maintaining the short source approach assuming the existence of a modal operator restricted to ellipsis environments. Since the suggestion is not developed in enough detail to be properly evaluated, I will put this possibility aside.

Here again the examples can be replicated in Polish, where the unavailablity of a copular source can be clearly seen in the case morphology of the wh-element. The examples in (82) provide the baseline:

(82) a. Jan będzie wściekły, jeżeli Piotr będzie rozmawiał z kimś.
Jan will.be mad if Piotr will talk with somebody-INSTR
'Jan will be mad if Piotr talks to somebody.'

b. *Z kim Jan będzie wściekły, jeżeli Piotr będzie rozmawiał?
with who-INSTR Jan will.be mad if Piotr will talk
'Who will Jan be mad if Piotr talks to?'

The examples in (83) show again the repair effect under ellipsis:

(83) a. Jan będzie wściekły, jeżeli Piotr będzie rozmawiał z pewnym
Jan will.be mad if Piotr will talk with certain-INSTR
profesorem, ale nie powiem ci, z którym (profesorem).
professor-INSTR but not tell-1SG you with which-instr professor-INSTR
'John will be mad if Peter talks to a certain professor, but I won't tell you which professor.'

b. Jan będzie wściekły, jeżeli Piotr będzie rozmawiał z pewnym
Jan will.be mad if Piotr will talk with certain-instr
profesorem, ale nie powiem ci, który *(to profesor).
professor-INSTR but not tell-1SG you which-NOM TO professor-NOM
'John will be mad if Peter talks to a certain professor, but I won't tell you which professor it is.'

Finally, idiom reconstruction is also possible with adjunct islands providing another direct argument against resumption as the source of repair under sluicing in English. The

example below shows that resumption can indeed ameliorate adjunct island violations:

(84) a. *Which woman will John be mad [if Bill kisses *t*]?

b. Which woman will John be mad [if Bill kisses **her**]?

(adapted from Boeckx 2008, p. 155)

But the following examples again show that the idiomatic reconstruction is possible under sluicing.

(85) a. ?*Which strings will John be mad if I pull {them/∅} to get that position?

b. John will be mad if I pull certain strings to get this position, but I will not tell you which strings.

It seems that deletion can indeed repair island violations.

2.3.2 Subject Islands

Consider the following examples provided in Merchant 1999, which show amelioration effects of subjects islands under sluicing:

(86) a. A biography of one of the Marx brothers {is going to be published/ will appear} this year - guess which!

b. *Which (Marx brother) [a biography of *t*] {is going to be published/ will appear} this year!

(adapted from Merchant 1999, p. 252)

(87) a. A biographer of one of the Marx brothers {interviewed her/ worked for her}, but I don't remember which.

b. *Which Marx brother did [a biographer of *t*] {interview her/ work for her}?

(adapted from Merchant 1999, p. 252)

If repair is possible, the derivation of these examples is straightforward:

(88) A biography of one of the Marx brothers {is going to be published/ will appear} this year - guess which (Marx brother) ~~[a biography of *t*] {is going to be published/ will appear} this year~~!

(89) A biographer of one of the Marx brother {interviewed her/ worked for her}, but I don't remember which (Marx brother) ~~[a biographer of *t*] {interviewed her/ worked for her}~~?

Merchant 1999 entertains an interesting account where the wh-element is launched from a *v*P-internal position. This would give the following representations:

(90) a. A biography of one of the Marx brothers is going to be published this year - guess which (of the Marx brothers) ~~[$_{IP}$ *e* is [$_{VP}$ going to be published [a biography of *t*] this year]]~~!

b. A biography of one of the Marx brothers will appear this year - guess which (of the Marx brothers) ~~[$_{IP}$ *e* will [$_{VP}$ appear [a biography of *t*] this year]]~~!

(91) a. A biographer of one of the Marx brothers interviewed her, but I don't remember which ~~[$_{IP}$ *e* [$_{vP}$ [a biographer of *t*] interviewed her]]~~

b. A biographer of one of the Marx brothers worked for her, but I don't remember which ~~[$_{IP}$ *e* [$_{vP}$ [a biographer of *t*] worked for her]]~~

Evidence for the availability of sub-extraction from DPs in predicate internal positions, according to him, comes from pairs like the following:

(92) a. *Which candidate were [posters of *t*] all over town?

b. Which candidate were there [posters of *t*] all over town?

(Merchant 1999, p. 254)

(93) a. *Which candidate did they say [to get *t* to agree to a debate] was hard?

b. Which candidate did they say it was hard [to get *t* to agree to a debate]?

(Merchant, 1999, p. 254)

The idea is that the movement to the grammatical subject position, [Spec,IP], is forced by the need of checking I^0's EPP-feature (Chomsky 1995, among others). In case of ellipsis, that feature is eliminated without requiring movement. As a result the DP that would be required to move to that position is allowed to stay in its base position. In this sense, what is being repaired is not a subject condition violation but an EPP violation.

There is however also evidence that A-movement to [Spec,IP] within the ellipsis site indeed happens, as pointed out by Merchant 1999 himself, Lasnik and Park 2003 and Lasnik 2005c. Consider the following examples provided by Merchant:

(94) a. [Every biography of one of the Marx brothers]$_1$ seemed to **its**$_2$ author to be definitive, but I don't remember (of) which (Marx brother).

b. [Every soldier from one of the airborne battalions]$_1$ seemed to **his**$_1$ commander

to be sick, but I don't know (from) which (battalion).

(Merchant 1999, p. 258)

In the examples in (94), the bound variables seem to be licensed within the ellipsis site. This implies that, inside the ellipsis site, the subject, in both examples, has indeed moved to a position where it c-commands the pronoun. Merchant entertains the possibility that the variable binding in these examples are done via quantifier raising (May 1977; Heim and Kratzer 1998) within the ellipsis site. This would allow the wh-element to escape from the DP from the predicate internal position, with later LF-movement of the quantificational DP to a position from where it could bind the variable. Merchant, however, reasons that a quantifier raising, an A′-movement, would unavoidably lead to a weak crossover violation. Crossover effects arise when an operator moves across an variable it is trying to bind (Postal 1971). Weak crossover arises when the variable in question does not c-command the trace of the operator (Wasow 1972; Koopman and Sportiche 1983):

(95) *Strong Crossover*

a. *Who$_1$ does he$_1$ like t_1?

b. *[Whose$_1$ mother$_2$] does he$_1$ like t_2?

c. *[Which picture of [which man]$_1$]$_2$ does he$_1$ like t$_2$?

(adapted from Lasnik and Uriagereka 1988, p. 137)

(96) *Weak Crossover*

a. *Who$_1$ does **his**$_1$ mother like t_1?

b. (i) His$_1$ mother loves everyone$_1$.

(ii) LF: Everyone$_1$ his$_1$ mother loves t_1.

(adapted from Lasnik and Uriagereka 1988, p. 148)

Lasnik 2005c also offers the examples in (97a), to which I add (97b):

(97) a. [Students of a certain linguist]$_1$ seem to themselves$_1$ to be geniuses, but I won't tell you which linguist$_1$.

b. [Students of a certain linguist]$_1$ seem to each other$_1$ to be geniuses, but I won't tell you which linguist$_1$.

Under the standard assumption that anaphors and reciprocals require A-binding, we are forced to conclude that A-movement happened within the ellipsis site. Merchant 1999, like van Craenenbroeck and Dikken 2006, suggested that A-movement could also be done at LF to maintain the analysis we are trying to reject. While we have seen evidence that repair exists, I know of no evidence that A-movement can be done at LF. Repair of subject islands under sluicing thus seems a more viable analysis.

2.3.3 Wh-islands and Superiority

The next type of island we are going to consider is wh-islands, which, to my knowledge were first discussed in Chomsky 1964, p. 43:

(98) a. **What**$_1$ might you think [that he will put t_1 here]?

b. *__What__$_1$ might you wonder [__where__$_2$ he will put t_1 t_2]?

In (98), it seems that an intervening wh-element is blocking movement of *what* from the embedded clause to [Spec,CP] of the matrix clause.

Chung et al. (1995, p. 272) observed that this type of locality restriction can be ameliorated under sluicing:

(99) a. *She wouldn't tell us **which problem** she was trying to work out **which students** would be able to solve *t*?

b. Sandy was trying to work out which students would be able to solve a certain problem, but she wouldn't tell us **which one**.

(expanded and modified from Chung et al. 1995, p. 272)

Observe also the following example from Serbo-Croatian also discussed in Boeckx and Lasnik 2006 and Bošković 2011:

(100) a. *Ne znam **koju knjigu** je svaki novinar danas izasao da sazna **ko** je napisao.

NEG know **which book** is every journalist today gone.out to find.out **who** is written

'I don't know which book every journalist went out today to find out who wrote.'[21]

[21] Sandra Stjepanović, pers. comm.

b. Svaki novinar je izasao danas da sazna **ko** prodaje jednu knjigu, ali
every journalist is gone.out today that finds.out who sells one book but
ne znam **koju** **(knjigu)**.
neg know which book
'Every journalist went out today to find out who was selling a certain book, but I do not know which (book).'

(adapted from Boeckx and Lasnik 2006, p. 152, Bošković 2011, p. 7)

Boeckx and Lasnik 2006 contrast the repair effect in wh-islands under sluicing with cases of superiority where repair does not obtain Stjepanović 1999, 2003. Since Serbo-Croatian is a multiple wh-fronting language, it is possible to see if superiority effects can be repaired by deletion in multiple sluicing. The following examples show the effect of superiority (*je* 'is' is a second position clitic):

(101) Ivan i Marko ne znaju ...
Ivan and Marko NEG know
'Ivan and Marko don't know ...'

a. **ko** je **šta** kupio.
who is **what** bought

b. *__šta__ je **ko** kupio.
what is **who** bought
'Who bought what.'

(adapted from Boeckx and Lasnik 2006, p. 152)

The order of the wh-elements is not arbitrary.[22] The wh-subject precedes the wh-object in the left periphery of the clause. The following examples show that the same effect arises in sluicing:

(102) Neko je nešto kupio, ali...
someone is something bought but
'Someone bought something, but ...'

a. Ivan i Marko ne znaju **ko šta**.
Ivan and Marko NEG know **who what**

b. *Ivan i Marko ne znaju **šta ko**.
Ivan and Marko NEG know **what who**
'Ivan and Marko do not know who what.'

(adapted from Boeckx and Lasnik 2006, p. 152)

The observation that superiority effects cannot be repaired by deletion has also been made for Bulgarian, another language with multiple wh-fronting:

[22] I assume that in multiple wh-fronting the second wh-element to move right-adjoins to the wh-element already in [Spec,CP] as in Rudin 1988 (for another possibility, see Richards 1997). I also assume that in (101) ellipsis bleeds the cliticization of *je* 'is', a second position clitic, and this is why *je* does not show up in (113b). This bleeding effect is be similar to what happen in matrix sluicing in English.

(i) A: John will see someone.
B: Who ~~[$_{IP}$ John will see t_{who}]~~?
B′: *Who will ~~[$_{IP}$ John t_{will} see t_{who}]~~?

Here ellipsis bleeds subject auxiliary inversion. See Lasnik 2001b for further discussion on this pattern, and Stjepanović 1999; Bošković 2001 and references therein for further discussion of second position clitics in Serbo-Croatian.

(103) a. **Koj kogo** e vidjal?

who whom AUX seen

b. *__Kogo koj__ e vidjal?

whom who AUX seen

Who saw whom?'

(adapted from Merchant 1999, p. 147)

(104) a. Njakoj e vidjal njalcogo, no ne znam **koj kogo**.

someone AUX seen someone but not I.know **who whom**

b. *Njakoj e vidjal njakogo, no ne znam **kogo koj**.

someone AUX seen someone but not I.know **whom who**

'Someone saw someone, but I don't know who saw who.'

(adapted from Merchant 1999, p. 147,148)

In comparing wh-islands with superiority, Boeckx and Lasnik 2006 point out a crucial difference. While in instances of superiority, the wh-elements seem to be competeting for the same position, in wh-islands, they are not. In our examples this can be seen below:

(105) *She wouldn't tell us **which students** she was trying to work out **which problem** *t* would be able to solve *t*?

(106) *Ne znam **ko** je svaki novinar danas izasao da sazna **koju knjigu** je
NEG know **who** is every journalist today gone.out to find.out **which book** is
t napisao *t*.
t written *t*
'*I don't know who every journalist went out today to find out which book wrote.'[23]

Boeckx and Lasnik 2006 concluded that intervention where the two elements compete for the same position, like superiority, should be considered a derivational constraint, a suggestion also made in Merchant 1999, p. 151. That repair is not possible because the structure cannot be generated to begin with. The grammar cannot assemble the deviant structures that could be later filtered out via ellipsis. Wh-island effects, on the other hand, although abstractly similar given the presence of the intervening wh-element, should be seen as a PF-representational constraint. Though, in principle, both superiority effects and wh-islands could fall under the notion of relativized minimality (Rizzi 1990; Cheng and Demirdache 1990), or one of its modern incarnations (*minimal link condition* or *minimal search* Chomsky 1995, 2000), the data just discussed militate against such a unified view.

At this point, I should also point out another reason to believe that the intervening wh-element is *not* culprit of wh-islands, at least not directly. Ross (1967, p. 27) already observes several examples where wh-movement across another wh-element in [Spec,CP] does not yield the marginality we see in (98b), as mentioned by Grano and Lasnik (2018):

[23] Sandra Stjepanović, pers. comm.

(107) a. He told me about a book **which** I can't figure out { to buy or not. / **how** to read. / **where** to obtain. / **what** to do about. }

b. He told me about a book **which** I can't figure out { **why** he read. / ?**whether** I should read. / ??**when** I should read. / **what** to do about. }

c. **Which books** did he tell you { **why** / ?**whether** / ??**when** } he wanted to read?

(Ross 1967, p. 27)

Grano and Lasnik (2018) suggest that the amelioration effect in Ross's examples is part of a larger generalization. Specifically, bound pronouns seem to have a redemptive effect in several phenomena that have been argued to be clause-bound. The clause-boundedness can be seen by comparing the examples in (108) with the associate examples in (109).

(108) a. *Too/Enough-movement*

This magazine is too lowbrow [for John to read *e*].

b. *Gapping*

Mary likes apples and [Ann ~~likes~~ oranges].

c. *Comparative deletion*

More people like apples than [~~like~~ oranges].

d. *Antecedent-contained deletion*

John reads everything [Bill does ~~read~~].

e. *Quantifier scope interaction*

[**At least one professor** reads **every journal**] ($\forall > \exists$)

f. *Multiple questions*

Tell me [who reads which journal].

(Grano and Lasnik 2018, p. 446)

(109) a. *This magazine is too lowbrow [for John to claim that Bill reads *e*]

b. *Mary claims that Jill likes apples and [Ann ~~claims that Jill likes~~ oranges].

c. *More people claim that Bill likes apples [than ~~claim that Bill likes~~oranges].

d. *John claims that Mark reads everything [Bill does ~~claim that Mark reads~~].

e. *[**At least one professor** claims that Ann reads **every journal**]. ($\forall > \exists$)

f. *Tell me [who claims that Mary reads which journal]

(Grano and Lasnik 2018, p. 446)

The bound pronoun effect in each of these can be seen in the following examples:

(110) a. ?This magazine is too lowbrow [for John1 to claim that **he**$_1$ reads *e*].

b. ?Mary$_1$ claims that **she**$_1$ likes apples and [Ann$_2$ ~~claims that **she**$_2$ likes~~ oranges].

c. ?More people$_1$ claim that **they**$_1$ like apples [than ~~claim that **they**$_1$ like~~ oranges].

d. ?John$_1$ claims that **he**$_1$ reads everything [Bill$_2$ does ~~aims that **he**$_2$ reads~~].

e. ?[**At least one professor**$_1$ claims that **she**$_1$ reads **every journal**]. ($\forall > \exists$)

f. ?Tell me [**who**$_1$ claims that **he**$_1$ reads **which journal**].

(Grano and Lasnik 2018, p. 447)

The authors then observe that bound pronouns also induce an amelioration effect in wh-islands:

(111) a. What$_2$ did Ann$_1$ wonder [whether PRO$_2$ to read t_1]?

b. ?What$_2$ did Ann$_1$ wonder [whether she$_1$ should read t_2]?

c. *What$_2$ did Ann wonder [whether Bill should read t_2]?

In the face of these findings, Grano and Lasnik suggest that the classic wh-island effects come from the fact that [Spec,CP] is already filled and therefore moving the second wh-element will unavoidably crossed a cyclic/phasal domain.[24] The bound pronoun in the subject position (including PRO) can neutralize the cycle thus allowing a wh-movement that would be otherwise illicit.

Let us now go back to our examples with wh-islands, repeated below with the relevant structural annotations:[25]

(112) a. *She wouldn't tell us [$_{CP2}$ **which problem**$_2$ [$_{IP}$ she was trying to work out [$_{CP2}$ **which students**$_1$ [$_{IP}$ t_1 would be able to solve t_2]]]]?

b. Sandy was trying to work out which students would be able to solve a certain problem, but she wouldn't tell us [$_{CP2}$ **which one**$_2$ ~~[$_{IP}$ Sandy was trying to work out [$_{CP1}$ **which students**$_1$ [$_{IP}$ t_1 would be able to solve t_2]]]~~]

(113) a. *Ne znam [$_{CP2}$ **koju knjigu**$_2$ je [$_{IP}$ svaki novinar danas izasao da
NEG know [$_{CP2}$ **which book**$_2$ is [$_{IP}$ every journalist today gone.out to

[24]The authors also suggest that clause-boundedness in the examples in (109) comes from a combination of cyclicity and the unavailability of escape hatches for syntactic objects that are not wh-elements.

[25]I am abstracting away from *v*P-phases and focusing on CP-phases, where the action happens in these examples.

sazna [$_{CP1}$ **ko**$_1$ je [$_{IP}$ t_1 napisao t_2]]].

find.out [$_{CP1}$ **who**$_1$ is [$_{IP}$ t_1 written t_2]]]]

'I don't know which book every journalist went out today to find out who wrote.'

b. Svaki novinar je izasao danas da sazna ko prodaje jednu knjigu, ali
every journalist is gone.out today that finds.out who sells one book but
ne znam [$_{CP2}$ **koju knjigu**$_2$ ~~[$_{IP}$ svaki novinar je danas izasao da~~
NEG know [$_{CP2}$ **which book**$_2$ ~~[$_{IP}$ every journalist is today gone.out to~~
~~sazna [$_{CP1}$ **ko**$_1$ [$_{IP}$ t_1 je napisao t_2]]]~~].
~~find.out [$_{CP1}$ **who**$_1$ [$_{IP}$ t_1 is written t_2]]]~~]

'Every journalist went out today to find out who was selling a certain book, but I do not know which (book).'

In these examples, the highest wh-element within CP_1, the subject, moves to [Spec,CP_1] obeying superiority. The issue arises with the second wh-movement. In English, we can say that [Spec,CP_2] is already filled by the wh-subject, therefore movement of the wh-object will have unavoidably cross a phasal domain without stopping at its edge. Since Serbo-Croatian is a multiple wh-fronting language, it is in principle possible to move the wh-object successive-cyclically. I assume this possibility is not available because wh-feature of the wh-object would be checked in [Spec,CP_1], preventing it from moving to [Spec,CP_2].

A final important point to be made is that the fact that ellipsis does not ameliorate superiority effects implies that there is syntax in the ellipsis site. In other words, the calculus of superiority implicates unpronounced syntax in the ellipsis site.

2.3.4 COMP-trace effects

To my knowledge COMP-trace effects are first systematically is discussed Perlmutter 1968. The observation is that there is an asymmetry between subject and non-subject extraction out of embedded clauses introduced by an overt complementizer:

(114) a. What did he say that Laura hid?

b. Where did he say that Laura hid the rutabaga?

c. When did he say that Laura hid the rutabaga?

d. *Who did he say that hid the rutabaga? (COMP-trace effect)

(adapted from Perlmutter 1968, p. 215)

Since Ross's seminal paper several further examples have been brought up to exemplify cases where constraints seem to be void under ellipsis. The first extension of Ross's observation that I know of is made in Perlmutter 1971, p. 111–112.[26] Consider the following examples provided by Perlmutter:

(115) a. *Sarah worked for six months in order for someone to buy a car, but I don't know who Sarah worked for six months in order for *t* to buy a car.

b. Sarah worked for six months in order for someone to buy a car, but I don't know who.

(adapted from Perlmutter 1971, p. 112)

In (115a), we have a COMP-trace effect as the complementizer *for* is immediately followed

[26] Perlmutter 1971 is the published version of Perlmutter's dissertation, which I am citing as Perlmutter 1968. I am using the two references separately because the discussion of amelioration under ellipsis appears in Perlmutter 1971 but not in Perlmutter 1968.

by a trace. The acceptability improves in the sluiced version in (115b).

Consider also two other examples presented in subsequent literature:

(116) a. Sally asked if somebody was going to fail Syntax One, but I can't remember who.

b. *Sally asked if somebody was going to fail Syntax One, but I can't remember who Sally asked *(*if*) *t* was going to fail Syntax One.

(adapted from Chung et al. 1995, p. 136)

(117) a. It appears that a certain senator will resign, but which (senator) is still a secret.

b. *It appears that a certain senator will resign, but which (senator) it appears *that* *t* will resign is still a secret. (adapted from Merchant 2008)

We are now going to see the repair effect of COMP-trace effects under ellipsis in a different language

Kandybowicz 2009 shows that COMP-trace effects also arise in Nupe:

(118) a. *Zèé u: bè [ke *t* du nakàn] na o?
who 3SG seem [COMP *t* cook meat] na FOC
'Who does it seem cooked the meat?'

b. Ke u: bè [ke Musa du *t*] na o?
what 3SG seem [COMP Musa cook *t*] na FOC
'What does it seem that Musa cooked?'

(adapted from Kandybowicz 2009)

Mendes and Kandybowicz in prep observe that, like in English COMP-trace effects do

not arise if the relevant portion of the structure is deleted:

(119) A: Musa gàn gànán ndàá ndoci si kèké.
Musa say.PST COMP man certain buy.PST bike
'Musa said that a certain man bought the bike.'

B: Ndàá kíci o?
man which FOC
'Which man did Musa say bought the bike?'

B′: *Ndàá kíci Musa gàn gànán *t* si kèké o?
man which Musa say.PST COMP *t* buy.PST bike FOC
'Which man did Musa say bought the bike?'

(Mendes and Kandybowicz in prep)

COMP-trace effects have received different analyses (see Pesetsky 2017 for a review). I will mention two. One popular analysis has been to reduce COMP-trace effects to the Empty Category Principle (ECP), which requires traces to be locally bound by their antecedents or locally related to a lexical category (Chomsky 1981; Lasnik and Saito 1984, 1992, among others). In a nutshell, COMP-trace violations would arise in the following way. First, the wh-trace in [Spec,IP] is not locally related to any lexical category, so its only chance to comply with the ECP is to be locally bound by its antecedent. The intervening complementizer, by assumption, would prevent this local relation between trace of the subject in [Spec,IP] and its antecedent in [Spec,CP].

This type of analysis however struggles, for instance, to accommodate the documented fact that adverbs seem to mitigate COMP-trace effects (Bresnan 1977, Culicover 1993; see

also Kandybowicz 2009 for other mitigating phenomena)

(120) a. Robin met the man who Leslie said **that** *(for all intents and purposes) *t* was the mayor of the city.

b. I asked what Leslie said **that** *(in her opinion) *t* had made Robin give a book to Lee.

(adapted from Culicover 1993, p. 257,258)

Similar effects can be found in Nupe:[27]

(121) Zĕ Gana gàn [**gànán** *(pányí lĕ) *t* du nakàn] o?
who Gana say.PST [**COMP** *(long ago formerly) *t* cook.PST meat] FOC
'Who did Gana say that long ago cooked the meat?'

(adapted from Kandybowicz 2009, p. 330-331)

If the ECP is an LF constraint, as often assumed, the repair effects under ellipsis that we have just seen will also be potentially problematic for an ECP analysis. Indeed, in section 2.3.6, we will see that ECP effects related to adjuncts *why* and *how* also resist repair effects.

Another popular analytical direction is to assume that COMP-trace effects is a surface phenomenon as proposed by Perlmutter 1968 (see also Chomsky and Lasnik 1977; Culicover 1993; Kandybowicz 2009, among others). As argued by Perlmutter 1971, this type of approach can straightforwardly deal with the repair effects. If ellipsis is PF-deletion and the source of COMP-trace effects resides in PF, repair effects are expected.

[27] Kandybowicz 2009 reports several strategies to circumvent *comp*-trace effects in Nupe, including resumption and complementizer reduction.

2.3.5 Left Branch Extraction

Let us turn now to constraints on Left Branch extraction. Ross 1969 presents the following minimal pair that seems to suggest that Left Branch Extraction violations are not ameliorated under sluicing in English:

(122) a. *I know that he must be proud of it, but I don't know how he must be [*t* proud] of it.

b. *I know that he must be proud of it, but I don't know how.

(adapted from Ross 1969, p. 276)

The examples in (123) follow the same pattern:

(123) a. *He wants a detailed list, but I don't know how.

b. *She bought an {expensive /fast /big} car, but I don't know how.

c. *She writes thorough reports. And wait till you see how!

d. *He bought expensive {toys /jewelry}, but he wouldn't say how.

e. *Your brother is a smart doctor, but it's not clear how.

(Merchant 1999, p. 223)

Merchant (1999) argues that it is premature to conclude from this data set that ellipsis does not repair Left Branch Extraction violations. If *how* in *how proud* is the head of a Degree Phrase (Corver 1990), he reasons, the examples above might be bad because we are trying to move a head to [Spec,CP].

He then presents the following examples, which control for this confound:

(124) a. He wants a detailed list, but I don't know how detailed.

b. She bought an {expensive /fast /big} car, but I don't know how {expensive /fast /big}.

c. She writes thorough reports. and wait till you see how thorough!

d. He bought expensive {toys /jewelry}, but he wouldn't say how expensive .

e. Your brother is a smart doctor, but it's not clear how smart.

(Merchant 1999, p. 225)

The pattern has also been replicated in Icelandic, a language with overt case morphology where copular sources require nominative case. The fact that copular sources require nominative case on wh-element provides direct evidence that amelioration of left branch extraction violation is due to ellipsis and not to a copular source:

(125) a. *Hversu ríkum giftist hún manni?
how rich.DAT married she.NOM man.DAT

b. Hún giftist ríkum manni, en ég veit ekki
she.NOM married rich.DAT man.DAT but I know not

(i) hversu {ríkum /*ríkur }
how {rich.DAT /*rich.NOM }
'She married a rich man, but I don't know how rich.'

(ii) ... en ég veit ekki hversu {*ríkum /ríkur } hann er.
... but I know not how {rich.DAT/ rich.NOM } he is
'... but I don't know how rich he is.'

(Wood et al. 2016, p. 64)

As already noticed by Ross 1967, section 4.3.2.5, left branch extraction seems possible in some languages (see (126)), in contrast with English and other languages.

(126) a. Ktore widziates [*t* auto]?
which you.saw [*t* car]
'Which car did you see?'

b. {Jakie /Jak duze} widziales [*t* auto]?
{what kind /how big} you.saw [*t* car]
'{What kind of /how big a} car did you see?'

c. Czyje widziales [*t* auto]?
whose you.saw [*t* car]
'Whose car did you see?'

(Rappaport 2000, p. 165)

This already suggests that the constraint on left branch extraction should not be taken as a computational limitation, which is corroborated by the repair effects we have just seen. Kennedy and Merchant 2000 suggest a possible way to deal with these facts. In a nutshell, the idea is that in languages that do not allow left branch extraction, movement of a DegP with wh-feature (*how detailed*, *how*, *how expensive*, ...) has to move cyclically to [Spec,CP] through a functional projection FP in the nominal domain (Corver 1990). The FP, inherits the wh-feature of the DegP, through Spec-head agreement, but languages like English, they argue, lack a proper way to spell out the head of FP with a wh-feature creating a PF problem. There are two ways to deal with such a feature in the language: (i) pied-pipe the entire FP, thus checking and eliminating F's wh-feature against a [+wh] C, or (ii) hide the

FP inside the ellipsis site where it will not require phonological realization:[28]

(127) a. *He wants a detailed list, but I don't know [$_{DegP}$ how detailed] he wants [*t* $\boxed{F_{wh}}$ a *t* list].

b. He wants a detailed list, but I don't know [$_{FP}$ [$_{DegP}$ how detailed] $\boxed{F_{\sout{wh}}}$ a list] he wants *t*.

c. He wants a detailed list, but I don't know [$_{DegP}$ how detailed] ~~he wants [*t* $\boxed{F_{wh}}$ a *t* list~~].

Languages like Polish would either be able to realize the +wh F as a null element or lack such a projection altogether.

2.3.6 Why and How?

Apart from the cases with left branch extraction, all the examples that we have discussed so far involve extraction of arguments. It has been pointed out in the literature that repair effects with extraction of *why* and *how* out of islands is hard to get.

Merchant 1999, p. 174, fn.8 presents the following examples:

(128) a. She's practicing her serve so that she'll be able to hit the ball in a certain deadly way, but her trainer won't tell us {in what way/??how}.

b. He wants to interview someone who works at the soup kitchen for a certain reason, but he won't reveal yet {?what reason /*why}.

Lasnik 2005a and Nakao 2009 also discuss data showing that repair effects seem

[28] A similar rationale will be used to deal with defective verbs under ellipsis in chapter 5.

unavailable with *why* and *how* remnants:

(129) a. John wants to hire [someone who fixes cars *with something*], but I don't know **what**.

b. *John wants to hire [someone who fixes cars *for a certain reason*], but I don't know (exactly) **why**.

c. *John wants to hire [someone who fixes cars *in a certain way*], but I don't (exactly) know **how**.

(adapted from from Nakao 2009, p. 59)

(130) a. John will be mad [if I dance *with a certain guy*], but I don't know **which**.

b. *John will be mad [if I dance *for a certain reason*], but I don't know **why**.

c. *John will be mad [if I dance *in a certain way*], but I don't know **how**.

(adapted from from Nakao 2009, p. 59)

Following Lasnik 2005a, Nakao 2009 provides an analysis for these examples in terms of the Empty Category Principle (ECP) (Chomsky 1981; Lasnik and Saito 1984, 1992). The ECP basically requires traces to be locally related either to their antecedent or to a lexical category. Since adjuncts are not introduced by a lexical category, they have to be locally bound by their antecedent. If ellipsis is PF-deletion and the ECP is checked at LF, deletion will not be able to remedy ECP violations.

The peculiar behaviour of *why* and *how* has also been observed long ago for Mandarin Chinese, a wh-*in situ* language. Huang 1982 showed that while wh-arguments inside island domains can take scope outside the island (see (131a) and (131b)), *why* and *how* cannot (see (131c) and (131d)). He took these facts as evidence that there is covert movement at LF,

subject to the ECP.

(131) a. [$_{NP}$ [$_{S}$ **shei** xie] de shu] zui youqu?

[$_{NP}$ [$_{S}$ **who** write] DE book] most interesting

'Books that who wrote are the moet interesting?'

b. [$_{NP}$ [$_{S}$ ta taolun **sheme**] de shu] zui youqu?

[$_{NP}$ [$_{S}$ he discuss **what**] DE book] most interesting

'Books in which he discusses what are most interesting?'

c. *[$_{NP}$ [$_{S}$ ta **weisheme** xie] de shu] zui youqu?

[$_{NP}$ [$_{S}$ he **why** write] DE book] most interesting

'Books that he wrote for what reason are most interesting?'

d. *[$_{NP}$ [$_{S}$ ta **zeme** xie] de shu] zui youqu?

[$_{NP}$ [$_{S}$ he how write] DE book] most interesting

'Books that he wrote how are most interesting?'

(adapted from Huang 1982, p. 527)

It should be noted that other temporal and locative adjuncts seem to have a different behaviour both in terms of repair effects and LF-movement in Mandarin Chinese:

(132) She is looking for journal entires that describe a battle {at a certain time /in a certain year}, but I don't remember when.

(Merchant 1999, p. 175)

(133) He wants to find a person who has worked somewhere specific in the Pacific. but I can't remember where.

(adapted from Merchant 1999, p. 175)

(134) a. [$_{NP}$ [$_{S}$ ta zai **nali** pai] de dianying] zui hao?
[$_{NP}$ [$_{S}$ he at **where** film] DE movie] most good
'Movies that he filmed where are the best?'

b. [$_{NP}$ [$_{S}$ ta **(zai) shemeshihou** pai] de dianying] zui hao?
[$_{NP}$ [$_{S}$ he **(at) when** film] DE movie] most good
'Movies that he filmed when are the best?

(adapted from Huang 1982, p. 527)

Pending a principled way to distinguish *why* and *how* from other types of adjuncts, I will assume that Lasnik and Nakao are correct in assigning the lack of repair in these examples to an ECP-effect. [29]

2.3.7 Summary

We have seen salvation by deletion at work in different domains: relative clauses, adjunct islands, subject islands, wh-islands, COMP-trace effects and left branch extraction. The salvation by deletion effects imply that crossing such islands, creating COMP-trace configurations and doing left branch extraction in languages like English and Icelandic creates a PF problem that can be circumvented by ellipsis. I considered and rejected

[29] Adapting a suggestion given in Huang 1982, we could assume that wh-adjuncts different from *why* and *how* are introduced by a null preposition and thus, different from *why* and *how* in that they are locally related to a lexical category and thus ECP-effects do not arise. I will leave this for future research.

some alternative approaches and general strategies that try to account for repair effects. I showed that amelioration effects arise even in environments where no short source can be identified. We also saw that superiority effects cannot be repaired by deletion, which following Merchant 1999 and Boeckx and Lasnik 2006, we took as evidence that we are dealing with a derivational constraint. In other words the structure cannot be built to begin with. The superiority effects also provide further evidence that there is structure in the ellipsis site. Finally, we saw that repair effects are harder to get with *why* and *how*, which suggests these are subject to the ECP, holding at LF.

2.4 Conclusions and prospects

In this chapter we saw several arguments for unpronounced syntax in the ellipsis site. Furthermore, I also reviewed evidence that the elided material has to be isomorphic with the antecedent, which also provides evidence for unpronounced syntactic structure. Two novel pieces of evidence were presented. The first was based on the fact that verb-echo answers in Polish can retain first conjunct agreement, which suggests agreement is able to target material properly contained in ellipsis site. The second piece of evidence was based on the observation that restrictions on the distribution of modals verbs in English like *must* are extended to ellipsis sites, which implies that ellipsis requires unpronounced syntax isomorphic with the antecedent.

The second point made in the chapter was that the phenomenon of salvation by deletion is real. In several points, I also considered the possibility of alternative analyses in terms of non-isomorphic sources and resumption, but we also saw several drawbacks with such approaches. From the fact that superiority violations cannot be repaired by deletion we

can draw two conclusions. First, that there is unpronounced structure in the ellipsis site. Second, superiority is different island constraints that we saw in this chapter. Specifically, while salvation by deletion implies that the repaired constraint is at least partly related to PF, lack of repair implies we are dealing with a derivational constraint. In the first case, the grammar is able to generate the deviant structure, which can then be repaired by deletion. On the other hand, derivational constraints prevent the grammar from assembling the relevant structure and there is no chance for repair. Finally there seems to be an LF-constraint preventing repair effects of *why* and *how*.

As we saw in section 2.3, the PF view on islands often relies on diacritics (e.g. #-marking and *-feature) to keep track of illicit movements. Structure containing the diacritics will be filtered out at PF. Ellipsis can remove the portion of the structure containing the diacritic salvaging the PF representation. The final question is what lies behind such a device whatever way we implement it. There are however two suggestions in the literature which might allow us to do away with such markings by integrating islanhood into the linearization domain, a PF-driven explanation that fits well with these findings.

One such approach is suggested in Hornstein, Lasnik, and Uriagereka 2007. The proposal builds on Uriagereka 1999b's (see also Uriagereka 2012) theory of multiples spell-outs. There are two ingredients in the proposal. First, linear order is only established at PF, forced by the need to put syntactic terminals into a certain order for externalization (Chomsky 1995). Second, building on Kayne 1994, natural languages follow a fixed linearization algorithm based on asymmetric c-command (e.g. *if* α *asymmetrically c-commands* β*, then* α *precedes* β). Complex specifiers, for instance, have to be spelled-out and flattened before being integrated into the structure so that they can comply with the linearization algorithm. As a result of this procedure, subject islands arise. If spell-out does

not apply, the specifier is not flattened and sub-extraction from it is possible. The potential problem that would be created by the unlinearized specifier is circumvented by ellipsis since the relevant syntactic objects inside the ellipsis site would not have to be linearized for externalization.

The second approach in suggested in Fox and Pesetsky 2005b. The basic idea is that at each phasal domain linear order is established and stored. Islands would correspond to phasal domains whose edges are not available for cyclic movement. As a result, movement out of islands will unavoidably create conflicting linearizations. Ellipsis is able to salvage the derivation by eliminating linearization statements involving the deleted material including contradictory linearlation statements arising from island violating movement. This gives rise to repair effects.

These are the only theories of locality that I know of that can potentially deal with salvation by deletion without resorting to *-feature type of marking. Working out how well these theories do for each specific island requires a research problem in itself and goes beyond the scope of this chapter and this dissertation. In the next chapters, however, I will show that Fox and Pesetsky 2005b's cyclic linearization framework can be used to analyze novel data involving salvation by deletion.

Chapter 3: Verb-echo answers in Brazilian Portuguese: word order and salvation by ellipsis

Verb-echo answers, a term I borrow from Holmberg 2016, are short replies composed by the repetition of the finite verb from the antecedent clause, sometimes accompanied by a polarity particle:

(1) A: O João trouxe açucar?
the John brought-3SG sugar
'Did John bring sugar?'

B: Trouxe, (sim).
brought yes
'Yes, he did.'

(2) A: A Maria comprou o livro?
the Mary bought-3SG the book
'Did Mary buy the book?'

B: Comprou, (sim).
bought-3SG yes
'Yes, she did.'

Verb-echo answers have been discussed to varying degrees of depth in the literature: McCloskey 1991 on Irish; Martins 1994, Kato 2016, Santos 2009 on Romance; Doron 1999, Landau 2018 on Hebrew; Jones 1999 on Welsh; Lipták 2012, 2013 on Hungarian; Gribanova 2013 on Russian; Ruda 2014 on Polish; Merchant 2018b on Greek; Sato and Hayashi 2018 on Japanese; among others. A welcome comparative study, with detailed discussion of several languages, is found in Holmberg 2016. The author identifies 62

languages from a sample of 129 as having verb-echo answers and discusses several ways to tease apart competing derivations.[1]

What we need to understand when dealing with verb-echo answers of the type in (1) and (2) is how the arguments of the verb are omitted. The first options that come to mind are: (i) multiple argument drop (see (3a) and (4a)); (ii) subject drop plus verb-stranding *v*P ellipsis (as in (3b) and (4b))[2]; and (iii) verb stranding clausal ellipsis (see (3c) and (4c)), my main focus here:[3]

(3) *Possible derivations for the verb-echo response in (1)*

a. [$_{CP}$ $e_{subject}$ trouxe e_{object}].
[$_{CP}$ $e_{subject}$ brought-3SG e_{object}]
'Yes.' *multiple argument drop*

[1]In verb-echo answers, the verb is *not* a mere repetition of the finite verb of the question as agreement morphology has to change depending on the subject of the answer.

(i) A: Eu pareço cansado?
I look tired
'Do I look tired?'
B: {Parece /*Pareço}.
{brought.2SG /*brought.2SG
'Yes, you do.'

[2]I will not distinguish between verb-stranding VP ellipsis and verb-stranding *v*P ellipsis, a nuance that is tangential for the present work. I will use the latter for convenience.

[3]Another possible way to implement verb-stranding clausal ellipsis would be to front the whole *v*P (with a null object) and apply IP-ellipsis (Masaya Yoshida pers. comm):

(i) [$_{CP}$ comprou ~~[$_{IP}$ a Maria *t* [$_{vP}$ *t* o livro]]~~].
[$_{CP}$ bought-3SG ~~[$_{IP}$ the Mary *t* [$_{vP}$ *t* the book]]~~]
'Yes.' *verb stranding clausal ellipsis*

Everything I say here about verb-stranding clausal ellipsis is consistent with this type of derivation. Since these two possible derivations are hard to distinguish, for concreteness, I represent verb-stranding clausal ellipsis in the body of the text with head movement.

b. [$_{CP}$ $e_{subject}$ trouxe ~~[$_{vP}$ *t* açucar]~~].

[$_{CP}$ $e_{subject}$ brought-3SG ~~[$_{vP}$ *t* sugar]~~]

'Yes.' *subject drop, verb stranding vP ellipsis*

c. [$_{CP}$ trouxe ~~[$_{IP}$ o João *t* [$_{vP}$ *t* açucar]]~~].

[$_{CP}$ brought-3SG ~~[$_{IP}$ the John *t* [$_{vP}$ *t* sugar]]~~]

'Yes.' *verb stranding clausal ellipsis*

(4) *Possible derivations for the verb-echo response in (2)*

a. [$_{CP}$ $e_{subject}$ comprou e_{object}].

[$_{CP}$ $e_{subject}$ bought-3SG e_{object}]

'Yes.' *multiple argument drop*

b. [$_{CP}$ $e_{subject}$ comprou ~~[$_{vP}$ *t* o livro]~~].

[$_{CP}$ $e_{subject}$ bought-3SG ~~[$_{vP}$ *t* the book]~~]

'Yes.' *subject drop, verb stranding vP ellipsis*

c. [$_{CP}$ comprou ~~[$_{IP}$ a Maria *t* [$_{vP}$ *t* o livro]]~~].

[$_{CP}$ bought-3SG ~~[$_{IP}$ the Mary *t* [$_{vP}$ *t* the book]]~~]

'Yes.' *verb stranding clausal ellipsis*

One immediate difficulty with a verb-stranding clausal ellipsis derivation in Brazilian Portuguese for these examples is that the language has limited verb initial word order (Kato and Tarallo 1988; Figueiredo Silva 1996; Kato 2000b, among many others; see section 3.1.2 for further qualifications and references), which can be illustrated in the examples below:

(5) a. *[$_{CP}$ trouxe [$_{IP}$ o João *t* [$_{vP}$ *t* açucar]]].

[$_{CP}$ brought-3SG [$_{IP}$ the John *t* [$_{vP}$ *t* sugar]]]

b. *[$_{CP}$ comprou [$_{IP}$ a Maria *t* [$_{vP}$ *t* o livro]]].

[$_{CP}$ bought-3SG [$_{IP}$ the Mary *t* [$_{vP}$ *t* the sugar]]]

The status of these examples suggests that the verb cannot regularly move across the subject.

Following Kato 2016, I will argue however that verb-stranding clausal ellipsis is possible in Brazilian Portuguese. My argument, inspired by the discussion of indefinite subjects in verb-echo answers in Holmberg (2016, §3.9), is based on the following generalization, which will be fully developed in section 3.2.1:

(6) **Verb-echo generalization:** the intended subject of a verb-echo answer in Brazilian Portuguese can have an indefinite or a free-choice interpretation. This is not possible for other types of subject omission in the language.

The verb-echo generalization suggests that the omission of the subject in verb-echo responses cannot be reduced to a process of subject drop independently available in the language. At the same time, verb-stranding clausal ellipsis can allow the subject of the answer to inherit different types of interpretation through identity with the antecedent.[4]

An analysis in term of clausal ellipsis conflicts with the restriction on verb-initial word order in the language. I will refer to this conflict as the *Word order puzzle for verb-echo*

[4]Though I phrase the connection between the interpretation of the subject of the verb-echo answer and the antecedent clause in term of *inheritance*, this is not intended to mean that ellipsis is done though LF-copying. I am assuming ellipsis is PF-deletion and therefore *inheritance* here just means that the identity condition on ellipsis indirectly allows the subject of the verb-echo answer and the subject of the antecedent clause to have the same type of indefinite or free-choice interpretation.

responses:

(7) **Word order puzzle for verb-echo responses**

(i) Verb-initial word order is not generally available in Brazilian Portuguese with transitive verbs;

(ii) However, verb-echo answers in Brazilian Portuguese can be derived by verb-stranding clausal ellipsis, circumventing word order limitations.

In this chapter, I will argue that the restriction on verb-initial word order in Brazilian Portuguese arises only at the surface and thus can be voided under ellipsis. I contend that such a restriction as well as its circumvention under ellipsis receives a natural explanation under the *cyclic linearization* framework (Fox and Pesetsky 2005a,b; Ko 2005, 2007, 2011, 2014). In a nutshell, spell-out is cyclic (Uriagereka, 1999b; Chomsky, 2000, 2001), meaning here that each phasal domain is mapped into linear order for pronunciation, and the ordering established in a given cyclic domain has to be preserved in later cycles. My proposal is that, in Brazilian Portuguese, the whole *v*P, including the external argument, is a cyclic domain. Thus, if {S$\prec$V$\prec$O} order is established at the *v*P, verb initial word orders will be blocked since moving the verb across the subject will yield conflicting ordering statements where V is required to follow and precede S, i.e. *{V$\prec$S$\prec$V$\prec$O}. I will argue that *salvation by deletion* is the key to understanding why verb-echo answers can circumvent such word order limitations. By preventing the elements involved in the ordering conflict from being pronounced, deletion is able to save a derivation that would otherwise be problematic at PF (see Fox and Pesetsky 2005b; Takahashi 2004; Lasnik 2009, for similar proposals in other domains).

The work presented here has several important consequences. On the empirical side, I provide several tests to diagnose verb-stranding clausal ellipsis. Second, the analysis presented here allows us to gain new insight not only into word order in Brazilian Portuguese but also into the nature of cyclicity, linearization, and their interaction with ellipsis.

This chapter is organized as follows. In section 3.1, I set the stage for the discussion of verb-echo answers. I present some background on Brazilian Portuguese null subjects, word order, object drop *versus* verb-stranding *v*P-ellipsis, and previous analyses of verb-echo answers in the language. I also show how verb initial word order, in limited contexts, can arise with transitive and unergative verbs in Brazilian Portuguese in a manner consistent with the claim that *v*P is a cyclic domain. In section 3.2, I present the verb-echo generalization, comparing data from Brazilian Portuguese with data from other languages. I spell out in the detail the salvation by deletion analysis for the *word order puzzle for verb-echo responses* and reject alternative analyses. In section 3.3, I discuss some cases where indeed the {S$\prec$V$\prec$O} word order predicted by my analysis seems to undergenerate and I suggest they are all illusory, as they can all receive alternative analyses. In section 3.4, I conclude.

3.1 Setting the stage

In this section, I provide some background on Brazilian Portuguese syntax. Most of the empirical observations to be discussed here come from previous literature. I make some novel empirical observations though, as well as present a new take on Brazilian Portuguese word order and clausal structure.

I start by briefly introducing the properties of null subjects in the language. I then show how its basic word order patterns can be accommodated under the assumption that *v*Ps that introduce external arguments are cyclic domains. After that, I present evidence that Brazilian Portuguese, alongside object drop, also has verb-stranding *v*P-ellipsis independently. Finally, I discuss some previous work on verb-echo answers in the language.

3.1.1 Null subjects in Brazilian Portuguese

I start by reviewing the availability of subject drop in Brazilian Portuguese syntax outside verb-echo answers.[5]

Brazilian Portuguese, has been classified as a *partial* pro-drop language (Holmberg, Nayudu, and Sheehan 2009 and references therein). Though the language does not have overt expletives for weather verbs and existential constructions (see (8), below), overt pronoun subjects are much more common than in consistent and radical/discourse pro-drop languages like European Portuguese and Japanese respectively.

(8) a. Choveu.
rained-3SG
'It rained.'

b. Nevou.
snowed-3SG
'It snowed.'

c. Tinha um homen na sala
had-3SG a man in-the room
'There was a man in the room.'

[5] I amplify this discussion in section 3.2 when I present the verb-echo answer generalization.

In general, only first person pronouns can drop in matrix clauses. This is usually tied to the partial neutralization of person discriminating morphology (see Duarte 1993, 1995, 2015; Figueiredo Silva 1996; Kato 1999; Ferreira 2000; Rodrigues 2004; Modesto 2008; Holmberg et al. 2009, a.o., for further discussion and different analyses).[6]

The following table shows the conjugation of *amar* 'to love' in the present indicative. As we can see, Brazilian Portuguese verbal morphology shows syncretism where European Portuguese does not.

(9) Conjugation of *amar* 'to love'; present indicative[7]

	1.SG	2.SG	3.SG	1.PL	2.PL	3.PL
European Portuguese	am-o	am-as	am-a	am-amos	am-ais	am-am
Brazilian Portuguese	am-o	am-a	am-a	am-{a/mos}	am-am	am-am

It should be said that the choice between dropping and pronouncing a first singular pronoun does not have an interpretative effect, such as topic or focus, as shown in the following examples:

(10) a. (Eu) amo você. 'I love you.
I love-1SG you

[6]Duarte (1993, 1995) shows a gradual decline in the use of referential null subjects from 1845 (80%) to 1992 (28%). She argues that the partial neutralization of agreement morphology on the verb has led to an increase in the filling of the subject position and the loss of Chomsky's (1981) AVOIDPRONOUN effect, characteristic of consistent and radical/discourse pro-drop languages. Ferreira (2000) also argues that Brazilian Portuguese has lost Montalbetti 's (1984) OVERT PRONOUN constraint, also known in the subsequent literature as *Montalbetti's principle*, according to which an overt pronoun cannot work as a variable if a covert pronoun is possible in that position. See also the references in the body of the text for further discussion on this.

[7]In the table, there are two forms for first person plural. The discriminating form *-mos* goes with the pronoun *nós* "we" and the syncretic form *-a* goes with the pronominal form *a gente*, literally 'the people', which has several peculiarities (Schmitz 1973; Kato 1999; Costa, Moura, Pereira, and Araújo 2001; Menuzzi 2000; Pereira 2003; Taylor 2009).

b. (Nós) amamos você. 'We love you.
we love-1PL you

Thematic null subjects in matrix clauses are also licit in three other situations apart from first person subjects: (i) when the null subject has a salient discourse referent (see (11)); (ii) when the subject is interpreted as a non-referential subject with a generic interpretation, with third person singular agreement morphology on the verb (see (12)); and (iii) when the subject receives an indefinite interpretation (*undetermined* in the Portuguese grammatical tradition), with third person *plural* agreement morphology on the verb (see (13)).[8]

(11) A: O João ainda está aqui? B: (Ele) acabou de sair.
the John still is here he finished of leave-INF
'Is John still here?' 'He's just left.'

(12) Na praia vende coco.
in-the beach sells coconut
'People sell coconut on the beach.'

(13) Roubaram meu carro.
stole-3PL my car
'Someone stole my car.'

I return to restrictions on the interpretation of null subjects in section 3.2.1.

[8]Embedded null subjects are possible in Brazilian Portuguese, where they usually receive an obligatory control interpretation. The analyses for this fact are divided into two families: (i) embedded null subjects are variables that end up bound by the matrix subject/topic (Modesto 2008, among others); and (ii) embedded null subjects are traces of A-movement in a thematic chain (Ferreira 2000; Rodrigues 2004, among others).

3.1.2 Word order in Brazilian Portuguese

Brazilian Portuguese is predominantly a {S≺V≺O} language. Verb-initial word order is possible in some contexts with unaccusative and unergative verbs, and in limited cases with transitive verbs (Lira 1986; Kato and Tarallo 1988; Figueiredo Silva 1996; Kato 2000b,a; Coelho 2000; Pilati 2006; Quarezemin 2005; Duarte and Figueiredo Silva 2016 among many others for further discussion).[9,10]

In principle, the existence of verb-initial word orders with transitives and unergative verbs might suggest that the verb and the external argument can be reordered after the *v*P is completed. Here, I propose that when deviations from {S≺V(≺O)} arise, the action happens inside the *v*P.

Let us start our discussion with transitive verbs. It has been noted in the literature that, with this type of verb, a sentence typically receives an {S≺V≺O} word order (Figueiredo Silva 1996 among others). The subject cannot often appear in a post-verbal position even if it receives a focus interpretation:[11]

[9] I will not do justice to the vast and interesting literature on word order in Brazilian Portuguese here. The empirical generalizations discussed in the section are mostly based on previously literature even though I do not take an exegetic approach given the goal of this chapter. My goal in this section is simply to show that the main patterns found in the literature can be accounted for with the assumption that *v*P is a cyclic domain which is linearized once completed.

[10] For historical data, see Berlinck 1988; Ribeiro 2001; Mattos e Silva 2006; Marques 2008.

[11] I return to a few other cases where this pattern seem to be broken in section 3.3.

(14) *Declarative sentences*

a. O João trouxe açucar.
the John brought-3SG sugar
'John brought sugar.'

b. *Trouxe o João açucar.
brought-3SG the John sugar
'The John brought sugar.'

c. *Trouxe açucar o João.
brought-3SG sugar the John
'John brought sugar.'

(15) *Yes/no-questions*

a. O João trouxe açucar?
the John brought-3SG sugar
'Did John bring sugar?'

b. *Trouxe o João açucar?
brought-3SG the John sugar
'Did John bring sugar?'

c. ?*Trouxe açucar o João?
brought-3SG sugar the John
'Did John bring sugar?'

(16) *Answers to yes/no-questions*

A: O João trouxe açucar?
the John brought-3SG sugar
'Did John bring sugar?'

B: ?Ele trouxe açucar.
he brought-3SG sugar
'He brought sugar.'

B′: *Trouxe ele açucar.
brought-3SG he sugar
'He brought sugar.'

B″: *Trouxe açucar ele.
brought-3SG sugar he
'He brought sugar.'

(17) *Focused subjects*

A: Quem que trouxe açucar?
who that brought-3SG sugar
'Who brought sugar?'

B: [$_F$ O João] trouxe açucar.
[$_F$ the John] brought-3SG sugar
'JOHN brought sugar.'

B′: *Trouxe [$_F$ o João] açucar.
brought-3SG [$_F$ the John] sugar
'JOHN brought sugar.'

B″: *Trouxe açucar [$_F$ o João].
brought-3SG sugar [$_F$ the John]
'JOHN brought sugar.'

The very same pattern arises if the subject is indefinite. These facts are consistent with the hypothesis that ordering established at the *v*P level is preserved in subsequent cycles.

The external argument of a transitive verb can appear in a post-verbal position in very limited contexts, often when it is heavy. In this position the subject invariably receives a focus interpretation:[12]

[12]It has been observed that {V≺O≺S} is also sometimes possible in some presentational contexts and {O≺V≺S} is sometimes possible with quotative inversion (Figueiredo Silva 1996; Pilati 2006):

(i) Está com a palavra o presidente.
is with the word the president
'It's the president's turn to speak.'

(ii) Pega a bola Neymar!
takes the ball Neymar
'Neymar takes the ball.'

(iii) 'O presidente não tem supporte' avaliou Pedro Martins.
the presidents not has support evaluated Peter Martins
'The president doesn't have support' evaluated Peter Martins.'

The examples in (i) and (iii) belong mostly to written or highly formal registers however, where speakers of Brazilian Portuguese sometimes use conservative templates inherited from European Portuguese. The example in (ii), on the other hand, only appears in soccer narratives. The speakers I consulted consistently reported examples like these as very unnatural in regular speech. Although, I take the grammatical status of such examples to be suspicious, I should note that (i) and (ii) could be made consistent with the analysis presented here. Cases of quotative inversion are more problematic.

There is one example in the literature which seems problematic for the generalization I present here:

(iv) (Ela) machuca a cabeça, essa escova.
she hurts the head this hairbrush
'This hairbrush hurts the head.' (Figueiredo Silva, 1996, p. 78-79)

In the absence of the pronoun in the initial position we indeed seem to get the {V≺O≺S} word order and this example is fairly natural in colloquial speech. We could assume that the subject is pro-dropped and that *essa escova* 'this hairbrush' is some sort of an appositive element. This strategy is not generally available and I leave it to future research.

(18) a. [Quem se comportou direito] comeu o bolo.
[who REFL behaved-3SG right] ate-3SG the cake
'(Only) those who behaved themselves ate the cake.'

b. *Comeu [quem se comportou direito] o bolo.
ate-3SG [who REFL behaved-3SG right] the cake
'(Only) those who behaved themselves ate the cake.'

c. Comeu o bolo [quem se comportou direito].
ate-3SG the cake [who REFL behaved-3SG right]
'Only those who behaved themselves ate the cake.'

I take {V≺O≺S} to be derived by extraposing the external argument to the right edge of the *v*P where it will be assigned a focus interpretation, an operation I take to be optional.

(19) [$_{vP}$ *t* comeu o bolo [quem se comportou direito]].
[$_{vP}$ *t* ate-3SG the cake [who REFL behaved-3SG right]]
'Only those who behaved themselves ate the cake.'

Since {V≺O≺S} is established in the *v*P, the extraposed subject is prevented from moving to [Spec,IP]. Following Bjorkman and Zeijlstra 2019, I assume that the nominative case feature of the subject, understood as an *u*T feature following Pesetsky and Torrego 2004, is checked through upward agreement with the finite/tensed I^0 (e.g. Infl$_{[iT]}$ ... DP$_{[u\cancel{T}]}$). This allows the nominative case to be checked without moving the subject to [Spec,IP]. The ϕ-agreement issue is more delicate, something I return to momentarily.

With unergative verbs, word order is often {S≺V} (see (20)), but {V≺S} is possible

in some contexts too, specifically, when the external argument is either indefinite (21) or when the subject receives a focus interpretation (22).

(20) A: O que que aconteceu?
what that happened-3SG
'What happened?'

B: O João ligou.
the John called-3SG
'John called.'

B′:??Ligou o João.
called-3SG the John
'John called.'

(21) A: O que que aconteceu?
what that happened-3SG
'What happened?'

B: Um estranho ligou.
a stranger called-3SG
'A stranger called.'

B′: Ligou um estranho.
called-3SG a stranger
'A stranger called.'

(22) A: Quem que ligou?
who that called-3SG
'Who called?'

B: [$_F$ O João] ligou.
[$_F$ the John] called-3SG
'John called.'

B′: Ligou [$_F$ o João].
called-3SG [$_F$ the John]
'JOHN called.'

Two points must be made here. First, there is a definiteness effect associated with post-

verbal subjects of unergative verbs, which is neutralized under focus.[13] Second, in contrast with transitive verbs, post-verbal subjects of unergative verbs do not necessarily receive a focus interpretation and it is easier to find non-heavy post-verbal subjects. The source of post-verbal subjects here must be somewhat different.

For the inverted constructions in (21) and (22), I assume that V can head-adjoin directly to *v* that introduces the subject without projecting a VP. This is possible because V does not introduce any argument. The effect of such a derivation is that the argument introduced by *v* is taken as a syntactic complement of the V-*v* complex and thus projects to the right.[14,15]

(23) a. $[_{vP}$ DP *v* $[_{VP}$ V $]]$ ordering = {S≺V}

b. $[_{vP}$ $[_{v}$ V *v* $]$ DP $]$ ordering = {V≺S}

If (23b) takes place, V≺S will be established at the *v*P level, again preventing the argument introduced by *v* from moving to [Spec,IP]. The nominative case feature, *u*T, of the subject, in this case, will also be checked against the *i*T with the subject in its base position.

Finally, unaccusatives can have both the {S≺V} and {V≺S} orders.

(24) A: O que que aconteceu?
what that happened
'What happened?'

B: A carta chegou.
the letter arrived
'The letter arrived.'

[13]Why this definiteness effect arises here and why it is mitigated under focus is an interesting question which I will not pursue further here.

[14]It remains to be investigated if both options are available for all unergative verbs.

[15]This idea provide a way to implement Figueiredo Silva's 1996 suggestion that post-verbal subjects with unergative verbs arise as part of process of *ergativization*. The idea that the argument introduce by a *v* can be interpreted as a complement by making V adjoin directly to *v* without projecting a VP provides a way to rationalize this intuition.

B′: Chegou a carta.
arrived the letter
'The letter arrived.'

(25) A: O que que aconteceu?
what that happened-3SG
'What happened?'

B: Uma carta chegou.
a letter arrived-3SG
'A letter arrived.'

B′: Chegou uma carta.
arrived-3SG a letter
'A letter arrived.'

(26) A: O que que chegou?
what that arrived-3SG
'What arrived?'

B: [$_F$ A carta] chegou.
[$_F$ the letter] arrived-3SG
'The letter arrived.'

B′: Chegou [$_F$ a carta].
arrived-3SG [$_F$ the letter]
'The letter arrived.'

Like in the previous cases, I assume that post-verbal subjects of unaccusatives check a nominative case, *u*T, against I^0's *i*T feature. Unaccusative verb phrases are often seen as weak phasal domains (Chomsky 2000). I take this to mean that the spell out of the verb phrase headed by an unaccusative verb before I^0 is merged is optional. When the VP is spelled out, the {V≺S} word order obtains because the subject will be prevented from moving to [Spec,IP]. Conversely, when the VP is not spelled out, the argument introduced by the unaccusative verb is raised to [Spec,IP], resulting in {S≺V} word order.[16]

[16]One way to implement this idea is to say that a phasal *v* can optionally be added on top of a VP headed

Before we proceed, a few words need to be said about agreement and what happens at the IP level when the subject is prevented from moving to [Spec,IP], though a complete analysis of the phenomenon would go far beyond the scope of this chapter. Following roughly Bjorkman and Zeijlstra 2019, I take EPP-effects to be a by-product of valuation-driven movement. The authors argue that agreement is always upwards, meaning that the probe has to be c-commanded by the agreement controller. In order to value the ϕ-features on I^0, the subject must raise to [Spec,IP]. In the cases I am considering, I assume that when the subject is prevented from moving to [Spec,IP], I^0 receives a default third person singular value.[17] I also assume that something along these lines happens with weather predicates and existential constructions.

3.1.3 Null objects and verb-stranding ellipsis in Brazilian Portuguese

In this section, I introduce evidence that Brazilian Portuguese has verb-stranding ellipsis. The discussion will focus on the omission of the object, which most of the literature has focused on.

Brazilian Portuguese allows object drop in some contexts (Galves 1989; Farrell 1990; Cyrino 1994; Ferreira 2000; Cyrino and Lopes 2016 among others):[18]

---

by an unaccusative verb. The optionality thus would not reside in the spell-out itself, but in the presence of a phasal head in such environments.

[17] Some speakers that I consulted seem to allow plural agreement with post-posed subjects. The system proposed in Bjorkman and Zeijlstra 2019 can account for such limited cases of agreement with post-verbal subjects. Though I refer the reader to their paper for further details, the intuition is that the case-checking relation I^0 established with an argument can make the features of the post-verbal subject exceptionally accessible to the ϕ-features in I^0.

[18] Example (27) is based on a Polish example given in Ruda 2014. Also, I will keep using *e* for object drop since in many cases it is unclear if we are dealing with a null pronoun or argument ellipsis. See Cyrino and Lopes (2016) for discussion.

(27) A: O que que nós vamos fazer com os vegetais?

what that we will-1PL do-INF with the vegetables

'What will we do with the vegetables?'

B: Nós vamos entregar *e* pro João.

we will-1PL give *e* to-the John

'We will roast **them**.'

At the same time, however, Brazilian Portuguese, as well as several other languages, has been argued to have, alongside plain object drop, verb stranding ellipsis which would give the illusion of object drop (Cyrino 1994; Kato 2003; Cyrino and Matos 2002 among others). In this type of derivation the verb leaves the *v*P which is then deleted. As a result, the object is eliminated alongside *v*P internal material.

(28) O João não viu a Maria, mas o Pedro viu.

the John not saw-3SG the Mary but the Peter saw-3SG.

'John didn't see Mary, but Peter did.'

(29) a. ... o Pedro viu e_{object}.

... the Peter saw-3SG e_{object}

'... Peter saw Mary.' *object drop*

b. ... o Pedro viu ~~[$_{vP}$ *t* a Maria]~~.

... the Peter saw-3SG ~~[$_{vP}$ *t* the Mary]~~

'... Peter saw Mary.' *verb-stranding vP ellipsis*

Finding out ways to distinguish between derivations in terms of object drop and derivations

where the object is omitted by verb-stranding ellipsis has been a widely practiced sport. I do not discuss all types of evidence for verb-stranding ellipsis here. Instead, I will provide just two diagnostics which I believe are strong enough to make the point.

The first diagnostic is based on adjunct omission (Raposo 1986), and the second is based on coordinator omission (Gribanova 2013).

Raposo's 1986 adjunct test is based on examples like the following:

(30) O Pedro não viu a Maria na escola, mas ele disse que
the Peter not saw-3SG the Mary in-the school but the he said-3SG
viu.
saw-3SG
'Peter didn't see the Mary at school, but he said he saw Mary at school.'

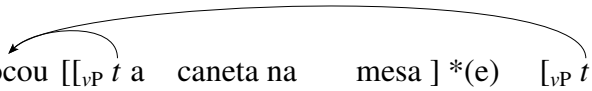
An analysis in terms of verb-stranding ellipsis can account for the fact that the PP adjunct can be recovered even though PPs typically lack pronominal counterparts. Landau 2019 has recently argued however that the content of adjuncts could well be pragmatically recovered and therefore examples like (30) do not reliably track verb-stranding ellipsis. While I agree with him that in certain cases such pragmatic recovery might be possible, I still think that the test is valid, as we can find examples where this possibility can be controlled for. Let us compare the example in (30) with the example in (31), where I mark the impossible reading with a star:

(31) O Pedro não viu a Maria na escola, mas ele disse que
the Peter not saw-3SG the Mary in-the school but the he said-3SG
viu ela.
saw-3SG her
*‘Peter didn’t see the Mary at school, but he said he saw her at school.’
‘Peter didn’t see the Mary at school, but he said he saw her.’

The example in (31) form a minimal pair with the example in (30). The only difference is that in (31) the complement of the verb is given. In (31), in contrast with (30), recovery of the adjunct is impossible. That is, in such examples the recovery of the adjunct seems contingent on the omission of the object. The PP adjunct cannot be simply pragmatically recovered since we would expect such a recovery to be independent of object omission

The second diagnostic I present is based on Gribanova 2013, who applied it to Russian. Here I extend her test to Brazilian Portuguese. The basic idea is that VP coordinators, which cannot generally be omitted outside verb-echo answers, must be omitted in verb-echo answers. In the examples below, (32) and (33), the antecedent clause can be seen as having two coordinated VPs whose head has been moved across-the-board to I^0.

(32) *Conjunction omission*



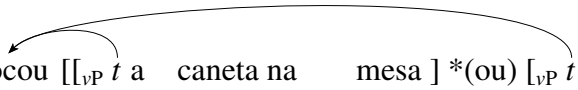
A: Você colocou [[$_{vP}$ *t* a caneta na mesa] *(e) [$_{vP}$ *t* o livro na
you put-2SG [[$_{vP}$ *t* the pen on-the table] *(and) [$_{vP}$ *t* the book on-the
cadeira]]?
chair]]
‘Did you put the pen on the table and the book on the chair?’

B: Coloquei (*e).

put-1SG and

'Yes.'

(33) *Disjunction omission*



A: Você colocou [[$_{vP}$ *t* a caneta na mesa] *(ou) [$_{vP}$ *t* o livro na cadeira

you put-2SG [[$_{vP}$ *t* the pen on-the table] *(or) [$_{vP}$ *t* the book on-the chair

]]?

]]

'Did you put the pen on the table or the book on the chair?'

B: Coloquei (*ou).

put-1SG or

'Yes.'

While, as shown in the examples in (A) of (32) and (33), coordinators cannot be generally omitted in Brazilian Portuguese, they have to be left out in the corresponding verb-echo answers in (32) and (33). The omission of the coordinator in these examples follows naturally under a verb-stranding ellipsis analysis provided that the constituent targeted for ellipsis is above the coordinated *v*Ps.

(34) *Conjunction omission*

A: Você colocou [[$_{vP}$ *t* a caneta na mesa] *(e) [$_{vP}$ *t* o livro na

you put-2SG [[$_{vP}$ *t* the pen on-the table] *(and) [$_{vP}$ *t* the book on-the

cadeira]]?

chair]]

'Did you put the pen on the table and the book on the chair?'

B: Coloquei ~~[[$_{vP}$ *t* a caneta na mesa]~~ [e] ~~[$_{vP}$ *t* o livro na cadeira]]~~.

put-1SG ~~[[$_{vP}$ *t* the pen on-the table]~~ [and] ~~[$_{vP}$ *t* the book on-the chair]]~~

'Yes.'

(35) *Disjunction omission*

A: Você colocou [[$_{vP}$ *t* a caneta na mesa] *(ou) [$_{vP}$ *t* o livro na cadeira

you put-2SG [[$_{vP}$ *t* the pen on-the table] *(or) [$_{vP}$ *t* the book on-the chair

]]?

]]

'Did you put the pen on the table or the book on the chair?'

B: Coloquei ~~[[$_{vP}$ *t* a caneta na mesa]~~ [ou] ~~[$_{vP}$ *t* o livro na cadeira]]~~.

put-1SG ~~[[$_{vP}$ *t* the pen on-the table]~~ [or] ~~[$_{vP}$ *t* the book on-the chair]]~~

'Yes.'

Multiple argument drop fails to explain the omission of the VP coordinators.

It is important to note that the problem with multiple argument drop in these examples is *not* that it predicts answers of the form *V e and e* to be good. This type of answer can

be independently ruled out as coordinator typically require overt conjuncts (see Merchant 1999, p.266-267 and references therein). This can be shown in Brazilian Portuguese with the following examples:

(36) A: O que que nós vamos fazer com os vegetais?
what that we will-1PL do-INF with the vegetables
'What will we do with the vegetables?'

B: Nós vamos assar os vegetais e a carne no forno.
we will-1PL roast-INF the vegetables and the meet in-the stove
'We will roast the vegetable and the meet in the stove.'

B′: *Nós vamos assar *e* e a carne no forno.
we will-1PL roast-INF *e* and the meet in-the stove
Intended: 'We will roast the vegetable and the meet in the stove.'

B″: *Nós vamos assar a carne e *e* no forno.
we will-1PL roast-INF the meet and *e* in-the stove
Intended: 'We will roast the beef and the vegetables in the stove.'

Similar facts obtain with *v*P-ellipsis. Consider first (37), which shows that Brazilian Portuguese has *v*P-ellipsis.

(37) A Maria pode dançar, e a Ana também pode.
the Mary can-3SG dance-ING and the Ana also can-3SG
'Mary can dance, and Ana can too.'

The examples in (38) and (39) shows that *v*Ps cannot be elided if they are arguments of a

coordinator:

(38) a. A Maria pode dançar, mas a Ana pode [dançar e cantar].
the Mary can-3SG dance-INF, but the Ana can-3SG [dance-INF and sing-INF]
'Mary can dance, but Ana can dance and sing.'

b. *A Maria pode dançar, mas a Ana pode [*e* e cantar]
the Mary can-3SG dance-INF, but the Ana can [*e* and sing-INF]
Intended: 'Mary can dance, but Ana can dance and sing.'

c. *A Maria pode dançar, mas a Ana pode [cantar e *e*]
the Mary can-3SG dance-INF, but the Ana can-3SG [sing-INF and *e*]
Intended: 'Mary can dance, but Ana can sing and dance.'

(39) a. A Maria pode dançar, mas a Ana pode [dançar ou cantar].
the Mary can-3SG dance-INF, but the Ana can-3SG [dance-INF or sing-INF]
'Mary can dance, but Ana can dance or sing.'

b. *A Maria pode dançar, mas a Ana pode [*e* ou cantar]
the Mary can-3SG dance-INF, but the Ana can-3SG [*e* or sing-INF]
Intended: 'Mary can dance, but Ana can dance or sing.'

c. *A Maria pode dançar, mas a Ana pode [cantar ou *e*]
the Mary can-3SG dance-INF, but the Ana can-3SG [sing-INF or *e*]
Intended: 'Mary can dance, but Ana can sing or dance.'

The problem with multiple argument drop in the testing sentences above thus is *not* that it overgenerates the floating coordinator. Without further stipulations, multiple argument drop cannot explain why the verb-echo answers without the coordinator in the testing

examples above are good.

It is important to note that only based on (32) and (33), it is impossible to know whether the subject is inside the ellipsis site or not. That is, such examples could either be derived by verb-stranding clausal ellipsis, or verb-stranding *v*P ellipsis with independent subject drop, independently available in the language as we saw in the last subsection.

3.1.4 Previous work on verb-echo answers in Brazilian Portuguese

In this section I evaluate two arguments for the existence of verb-stranding clausal ellipsis in Brazilian Portuguese.

The argument given by Kato (2016) that Brazilian Portuguese verb-echo answers are not derived by subject pro-drop but rather by a process of verb-stranding clausal ellipsis is based on the observation that in answers to yes-no questions an overt subject typically receives a contrastive interpretation. She gives the following examples:

(40) A: Você viu o Pedro?
you saw-3SG the Peter
'Did you see Peter?'
B: *Eu vi.
I saw
'I did.'
B′: EU vi, mas O JOÃO não.
I saw-3SG but the John not
'I did, but John didn't' (Kato 2016)

According to Kato, this effect arises because in answers to yes-no questions the finite verb moves from its canonical position in Infl to a Focus head above the subject. Thus, a pre-verbal overt subject in a verb-echo answer is also forced to move higher, a position she identifies as [Spec,TopP].

Kato also points out that the subject cannot be positioned in a post-verbal position in answer to yes-no questions, as in (41) below, from which she concludes that the constituent targeted for ellipsis should be higher than the VP.

(41) A: O João comprou um carro vermelho?
the John brought-3SG a car red
'Did John buy a red car?'

B: Comprou.
bought
'Yes.'

B′: *Comprou ele.
bought-3SG he
'Yes.'

B″: *Comprou ele um carro vermelho.
bought-3SG he a car red
'Yes.' (adapted from Kato 2016)

Kato does not discuss why clausal ellipsis has to happen in these cases, a problem I called the *word order puzzle for verb-echo responses* in the introduction.[19] Also, while I agree that

[19]Kato actually assumes that the deleted material moves to a GroundP projection where it is interpreted as a presupposition and deleted. The result gives an {S≺O≺V} word order, which is also not possible in the language as we saw earlier.

there is a preference for omitting a non-contrastive subject in answers to polar questions, I am not sure that the example (B) in (40) is completely out. For me and the speakers I consulted (40) seems reasonably fine, though it feels a bit redundant. I thus think that we should be cautious about drawing firm conclusions from this data set. I take Kato's observation as suggestive at this point, but not conclusive.

Holmberg (2016) gives an argument from European Portuguese that can be naturally extended to Brazilian Portuguese. He observes that the intended subject of verb-echo answers can have an indefinite interpretation with existential force.

Consider first the following example:

(42) *European Portuguese*

A: Alguém trouxe açucar?
someone brought-3SG sugar
'Did anyone bring sugar?'

B: Trouxe. (Está aí.)
brought-3SG is there
'Yes. (It's over there.)' (Adapted from Holmberg 2016)

Here the antecedent clause, the yes-no question, does not introduce a discourse referent, but the verb-echo answer is fine. The intended subject of the answer has an indefinite interpretation. It confirms that *someone brought sugar*. Holmeberg assumes that pro-drop is possible in languages like Portuguese, Italian, Finnish and so on, when the features of the subject are completely redundant with the agreement features on I^0. On the other hand, an indefinite subject would carry at least one more feature responsible for

the indefinite/existential interpretation, which does not have a counterpart in the verb's inflectional domain. This mismatch, according to him, would block the dropping of indefinite subjects. The fact that the indefinite interpretation is possible in (42) suggests that the subject has been omitted by other means. Holmberg reasons that a verb stranding ellipsis derivation that includes the subject position within the ellipsis site for verb-echo answers can give the desired indefinite interpretation. If the subject is within the ellipsis site, the identity condition on ellipsis will allow the subject to inherit the indefinite interpretation from the antecedent.

While I think that Holmberg is on the right track, it seems to me that one piece of the argument is missing. In principle it is possible to have subject ellipsis, which would also be able to deliver an indefinite null subject under identity with the antecedent. Subject argument ellipsis has been documented in languages like Japanese (Oku 1998, among many others), a point we will return to in the next section. In order to use indefinite subjects in verb-echo answers as evidence for a derivation in terms of verb-stranding clausal ellipsis, we have to rule out empirically the possibility of independent subject argument ellipsis in the language.

3.1.5 Summary

In this section we discussed the basic facts about null subjects in Brazilian Portuguese, often classified as a partial null subject language. The language does not require null subjects in weather predicates and existential constructions and subjects can be dropped under certain circumstances. Brazilian Portuguese also has generic null subjects with third person singular morphology on the verb and indefinite/undetermined null subjects with

third person plural morphology on the verb.

I also showed how word order patterns in the language can be consistent with the hypothesis that *v*P is a cyclic domain. Sentences with transitive subjects in the language typically receive an {S$\prec$V$\prec$O} word order. Post-verbal subjects with this type of verb appear only in very limited contexts and cannot appear in between the verb and object. I interpreted these facts to mean that *v*P is a cyclic domain in the language and that the limited {V$\prec$O$\prec$S} word order is derived by *v*P-internal extraposition of the external argument. Post-verbal subjects with unergatives and unaccusatives were also derived in a way consistent with the hypothesis that the *v*P is linearized once completed.

Finally, I presented two diagnostics that verb-stranding ellipsis is possible in the language. The first diagnostic is based on cases where the omission of an adjunct is contingent on the omission of other VP-internal material. The other diagnostic, which as far as I know had not been applied to Brazilian Portuguese, is based on the obligatory omission of the coordinator in cases of verb-echo answer with coordinated *v*Ps. I also reviewed arguments that verb-stranding clausal ellipsis is available in Brazilian Portuguese and found them inconclusive.

I turn now to the verb-echo generalization, which I take to provide evidence that verb-stranding clausal ellipsis can indeed deliver verb-echo answers in Brazilian Portuguese.

3.2 Verb stranding clausal ellipsis is real

In this section, I discuss the main motivation for verb-stranding clausal ellipsis in Brazilian Portuguese, namely, the verb-echo generalization.

3.2.1 The verb-echo generalization

The range of interpretations that the intended subject in verb-echo answers can have is larger than that of subject drop in the language. I show that this can be explained if verb-echo answers can have a derivation in terms of verb-stranding clausal ellipsis.

The verb-echo generalization, from the introduction, summarizes the diagnostics discussed in this section.

(43) **Verb-echo generalization:** the intended subject of a verb-echo answer in Brazilian Portuguese can have an indefinite or a free-choice interpretation. This is not possible for other types of subject omission in the language.

The initial observation is that an indefinite interpretation is in general not available for independent subject drop. (44) exemplifies this claim:

(44) Alguém trouxe açucar ontem e *e* trouxe café hoje.
someone brought-3SG sugar yesterday and *e* brought-3SG coffee today
'Someone brought sugar yesterday, and {*someone/this person} brought coffee today.'

This contrasts with languages like Japanese and Korean, (45)[20] and (46),[21] respectively, where null subjects can receive indefinite interpretation:

[20] Hisao Kurokami, pers. comm.
[21] Suyoung Bae, pers. comm.

(45) Kinou dareka-ga sato-o mottekite kyoo *e* koohii-o mottekita.
yesterday someone-NOM sugar-ACC brought.and today *e* coffee-ACC brought
'Yesterday, someone brought sugar, and today {someone/ this person} brought coffee.'

(46) Nwukwunka-ka ecey seoltang-ul kacyewa-ss-ta kuliko *e* onul
someone-NOM yesterday sugar-ACC bring-PST-DEC and *e* today
khephi-lul kacyewa-ss-ta.
coffee-ACC bring-PST-DEC
'Yesterday, someone brought sugar, and today {someone/ this person} brought coffee.'

Indefinite null subjects in Japanese are analyzed by Oku 1998 as an instance of subject ellipsis, a position I adopt here for Japanese and Korean. The possibility of subject ellipsis gives the null subject more freedom in interpretation than a null pronoun in the subject position would. The contrast between Brazilian Portuguese on one side and Japanese and Korean on the other can be accounted for by saying that anaphoric subject drop in Brazilian Portuguese is an instance of pro-drop, whereas subject drop in Japanese and Korean can be subject ellipsis:

(47) Alguém trouxe açucar ontem e *pro* trouxe café hoje
someone brought-3SG sugar yesterday and *pro* brought-3SG coffee today
'Someone brought sugar, and {this person/ *someone} brought coffee today.'

(48) Kinou dareka-ga sato-o mottekite kyoo ~~dareka-ga~~
yesterday someone-NOM sugar-ACC brought.and today ~~someone-NOM~~
koohii-o mottekita.
coffee-ACC brought
'Yesterday, someone brought sugar, and today someone brought coffee.'

(49) Nwukwunka-ka ecey seoltang-ul kacyewa-ss-ta kuliko ~~nwukwunka-ka~~
someone-NOM yesterday sugar-ACC bring-PST-DEC and ~~someone-NOM~~
onul khephi-lul kacyewa-ss-ta
today coffee-ACC bring-PST-DEC
'Yesterday, someone brought sugar, and today someone brought coffee.'

The availability of generalized argument ellipsis has been correlated with several properties not found in Brazilian Portuguese, namely: (i) the availability of scrambling (Oku 1998); robust use of bare arguments (Tomioka 2004)[22]; and (iii) lack of subject agreement morphology (Tomioka 2004; Şener and Takahashi 2010). Bare singulars in the subject position are possible in Brazilian Portuguese, but they typically receive a generic interpretation and are unacceptable with episodic predicates (e.g. **Amigo partiu ontem*, lit. 'Friend left yesterday.'; see Müller and Oliveira 2010). Regardless of what controls the availability of indefinite null subjects cross-linguistically (possibly all these properties matter to some extent), the crucial observation is that, in contrast with Japanese and Korean, an indefinite interpretation of null subjects in Brazilian Portuguese is not possible.

With a proper intonation however the intended subject of a verb-echo answer *can* be

[22]Bare arguments are arguments without determiners.

assigned an indefinite interpretation, in contrast with the examples like (44) above:

(50) A: Alguém trouxe açucar? B: Trouxe.
someone brought-3SG sugar brought-3SG
'Did anyone bring sugar?' 'Yes, someone did.'

Notice that the antecedent clause does not introduce a discourse referent that a null definite pronoun (pro_{he}, pro_{she}, ...) in the subject position of the verb-echo answer could point to. The definite interpretation of the omitted subject is thus not possible. The crucial point here is that the intended indefinite interpretation of the omitted subject, which is made transparent in the translation, is not independently available in the language as we saw. It is contingent on the omission of other IP-internal material.

The pattern can be accounted for if verb-echo answers in Brazilian Portuguese are not (necessarily) derived by independent subject drop, but the grammar of the language makes available a derivation for verb-echo answers in term of verb-stranding clausal ellipsis. Since the subject stays in the ellipsis site in this type of derivation, it can inherit the indefinite interpretation from the antecedent.

(51) A: Alguém trouxe açucar?
someone brought-3SG sugar
'Did anyone bring sugar?'
B: [$_{\text{CP}}$ trouxe ~~[$_{\text{IP}}$ alguém *t* [$_{\text{vP}}$ *t* açucar]]~~].
[$_{\text{CP}}$ brought-3SG ~~[$_{\text{IP}}$ someone *t* [$_{\text{vP}}$ *t* sugar]]~~]
'Yes, someone did.'

Let us see another example, which makes a similar point perhaps in a more dramatic way:

(52) [Context: A and B disagree on the facts]

A:	Ninguém trouxe açucar.	B:	Trouxe, sim.
	No-one brought-3SG sugar		brought-3SG yes
	'No-one brought sugar.'		'Yes, someone did.'

Here again the antecedent clause does not introduce a discourse referent. The subject of the verb-echo answer also receives an indefinite interpretation, which is not available for null subjects in the language. Again, the verb-echo answer is incompatible with independent subject drop, but the verb-stranding clausal ellipsis derivation can deliver the desired results.

One might worry about the fact that the antecedent is a negative indefinite in (52). The negative interpretation is, of course, not carried to the verb-echo answer in the examples above. We need to explain why this is possible and how ellipsis can cope with such a mismatch. Following Zeijlstra 2004 and Merchant 2013a, I adopt the view that negative indefinites do not carry negative interpretation by themselves. Instead, negative morphology is licensed by agreement with a negative operator which is null if the negative indefinite is pre-verbal and overt if it post-verbal. There is independent evidence coming from ellipsis for taking such a view. Specifically, similarly to what we see with verb-echo answers, *v*P ellipsis also seems to ignore the difference between negative and non-negative indefinites:

(53) a. O João vai beijar {**alguém/** *ninguém }.

the John will-3SG kiss-INF {**someone/** *no-one }

'John will kiss someone.'

b. Mas a Maria não vai ~~[$_{vP}$ beijar {**ninguém/** *alguém }]~~

but the Mary not will-3SG ~~[$_{vP}$ kiss-INF {**no-one/** *someone }]~~

'But Mary will not.'

(54) a. O João não vai beijar {**ninguém/** *alguém }

the John not will-3SG kiss-INF {**no-one/** *someone }

'John will not kiss anyone.'

b. Mas a Maria vai ~~[$_{vP}$ beijar {**alguém/** *ninguém }]~~

but the Mary will-3SG ~~[$_{vP}$ kiss-INF {**someone/** *no-one }]~~

'But Mary will.'

In such cases we can assume that the indefinites enter in the derivation with a an unvalued polarity feature, which either receives a negative specification through agreement with sentence negation or a default positive specification.[23]

[23]These spell out rules are adapted from Merchant 2013a, where the author discusses similar issues in English building on Klima 1964.

(55) a. Lexical entry: {Cat[D,Human];Infl[Pol:_]}

b. *Spell-out rules*

(i) {Cat[D,Indef,Human];Pol[Neg]} ↔ ninguém

(ii) {Cat[D,Indef,Human];Pol[Pos]} ↔ alguém

(56) a. ... não$_{\{Pol:Neg\}}$ vai beijar **ninguém**$_{\{Infl[Pol:Neg]\}}$

... not$_{\{Pol:Neg\}}$ will-3SG kiss-INF **no-one**$_{\{Infl[Pol:Neg]\}}$

'... will not kiss anyone.'

b. ... vai beijar **alguém**$_{\{Infl[Pol:Pos]\}}$

... will-3SG kiss-INF **someone**$_{\{Infl[Pol:Pos]\}}$

'... will not kiss anyone.'

Since negation is interpreted outside the ellipsis site and inflectional morphology is often ignored for ellipsis purposes (Chomsky 1965, p. 176–182; Merchant 2013a, among many others), deletion is possible.

Likewise, for the verb-echo answers we can assume the following derivation where the identity issue is mitigated by the fact that the polarity inflectional features are assigned in the course of the derivation:

(57) [Context: A and B disagree on the facts]

A: *Op*$_{\{Pol:Neg\}}$ [$_{IP}$ ninguém$_{\{nfl[Pol:neg]\}}$ trouxe açucar].

Op$_{\{Pol:neg\}}$ [$_{IP}$ no-one$_{\{Infl[Pol:neg]\}}$ brought-3SG sugar]

'No-one brought sugar.'

B: [$_{CP}$ trouxe ~~[$_{IP}$ alguém$_{\{Infl[Pol:Pos]\}}$ *t* [$_{vP}$ *t* açucar]]~~].

[$_{CP}$ brought-3SG ~~[$_{IP}$ someone$_{\{Infl[Pol:Pos]\}}$ *t* [$_{vP}$ *t* sugar]]~~]

'Yes, someone did.'

Further evidence that the negative operator can sit outside the clausal domain including the negative indefinite in the subject position and its predicate comes from examples like (58), built after Merchant 2013a, which has the ambiguity expressed in (58a) and (58b):

(58) Ninguém do departamento roubou os documentos, como o João
no-one of-the department stole-3SG the files as the John
alegou.
alleged-3SG
'No-one in the department stole the files, as John alleged.'

a. John's allegation: No-one in the department stole the files.

b. John's allegation: Someone in the department stole the files.

If negation is interpreted outside the IP, the ambiguity is reduced to the scope of the as-clause. If the as-clause scopes over negation as in (59a), we have the interpretation in (58a), whereas if it scopes under negation as in (59b), we have the interpretation in (58b).

(59) a. [$Op_{\{Pol:Neg\}}$ [$_{IP}$ ninguém$_{\{Infl[Pol:Neg]\}}$ do departamento roubou os
[$Op_{\{Pol:Neg\}}$ [$_{IP}$ no-one$_{\{Infl[Pol:Neg]\}}$ of-the department stole-3SG the
documentos]], como o João alegou.
files]] as the John alleged-3SG

b. $Op_{\{Pol:Neg\}}$ [IP [IP ninguém$_{\{Infl[Pol:Neg]\}}$ do departamento roubou os
$Op_{\{Pol:Neg\}}$ [IP [IP no-one$_{\{Infl[Pol:Neg]\}}$ of-the department stole-3SG the
documentos], como o João alegou].
files] as the John alleged-3SG]

Before we proceed, I would like point out that Guatemalan Spanish, which also allows verb-echo answers in some contexts, contrasts with Brazilian Portuguese precisely on this point. (60) is an example of verb-echo answer. (61) and (62) show that the intended subject of verb-echo answers in this language cannot have an indefinite interpretation:[24]

(60) A: Trajo Juan azúcar?
brought-3SG Juan sugar
'Did Juan brought sugar?'

B: Trajo, pues.
brought-3SG well
'Yes.'

(61) A: Trajo alguien azúcar?
brought-3SG someone sugar
'Did anyone brought sugar?'

B: *Trajo, pues.
brought-3SG well
'Yes.'

(62) A: Nadie trajo azúcar.
Nobody brought-3SG sugar
'Nobody brought sugar.'

B: *Trajo, pues.
brought-3SG well
'Yes, somebody did.'/ 'Yes, he did.'

In contrast with Brazilian Portuguese, here it looks like we are indeed facing a pro-

[24]Rodrigo Ranero, pers. comm. Holmberg 2016 reports similar judgements for Georgian and Syrian Arabic to make the same point.

dropped subject and not verb-stranding clausal ellipsis, nor independent subject ellipsis. Since the antecedent clause in (61) and (62) does not introduce a discourse referent, *pro* cannot find an appropriate target, and the verb-echo answer cannot work.

I now apply the same rationale to free-choice subjects. To do this we first need to establish that null subjects cannot have a free-choice interpretation independently in the language. Consider the following example in a context where the faculty members at MIT and Stanford do not overlap.

(63) Qualquer professor rejeitaria o João no MIT, mas *(qualquer
any professor would.reject-3SG the John in-the MIT but *(any
professor) aceitaria ele em Stanford.
professor) would.accept-3SG him in-the Stanford
'Any professor would reject John at MIT, but any professor would accept him at Stanford.'

The example above was built in a way that the restrictors of the two free-choice elements in the two clauses are different and control for a potential interfering variable binding reading with VP coordination that could arise in simpler examples. The point can be shown with the following English examples:

(64) a. Any professor would accept John and reject Mary. (For any professor x, x would accept John and x would reject Mary.)

b. Any professor would accept John and any professor would accept Mary.

The examples in (64a) and (64b) have different syntactic structures. (64a) involves VP

coordination, since English does not have null subjects, and (64a) has clausal coordination, (64a) and (64b) entail each other. The example in (63) controls for the variable binding interpretation with the VP coordination structure, showing that null subjects in Brazilian Portuguese cannot have a free-choice interpretation.

Now, we can see that the intended subject of a verb-echo answer can have the free-choice interpretation.

(65) A: Qualquer professor aceitaria o João?
any professor would.accept-3SG the John
'Would any professor accept John?'
B: Aceitaria.
would.accept-3SG
'Yes.'

The verb-echo answer is good. In the verb stranding clausal ellipsis derivation, the subject can inherit the free-choice interpretation from the antecedent through identity.

(66) A: Qualquer professor aceitaria o João?
any professor would.accept-3SG the John
'Would any professor accept John?'
B: [$_{CP}$ aceitaria ~~[$_{IP}$ qualquer professor *t* [$_{vP}$ *t* o João]]~~].
[$_{CP}$ would.accept-3SG ~~[$_{IP}$ any professor *t* [$_{vP}$ *t* the John]]~~]
'Yes, any professor would.'

Brazilian Portuguese again contrasts with Guatemalan Spanish, where the free-choice

interpretation of the dropped subject is impossible.

(67) A: Aceptaría Maria a Juan?
would.accept-3SG Maria ACC Juan
'Would professor accept Juan?'
B: Lo=aceptaría, pues.
CL-3SG=would.accept-3SG well
'Yes.'

(68) A: Aceptaría cualquier profesor a Juan?
would.accept-3SG any professor ACC Juan
'Would professor accept Juan?'
B: *Lo=aceptaría, pues.
CL-3SG=would.accept-3SG well
'Yes.'

If a pro-dropped subject cannot have a free-choice interpretation, the example above can be easily ruled out.

In sum, the intended subjects of verb-echo answers in Brazilian Portuguese can have an indefinite and free choice interpretation. These are not available independently for null subjects in the language. This provides support for the existence of the verb-stranding clausal ellipsis derivation for verb-echo answers in the language.

3.2.2 Cyclic linearization, word order and salvation by deletion

In this section, we will return to the *word order puzzle for verb-echo responses*, repeated below:

(69) **Word order puzzle for verb-echo responses**

(i) Verb-initial word order is not generally available in Brazilian Portuguese with transitive verbs;

(ii) However, verb-echo answers in Brazilian Portuguese can be derived by verb-stranding clausal ellipsis, circumventing word order limitations.

The hypothesis I am pursuing is that the *v*P is a cyclic domain in Brazilian Portuguese, which is linearized for pronounciation once completed, and that derivations are order preserving (Fox and Pesetsky 2005b,a; Ko 2005, 2014).

Fox and Pesetsky 2005b,a present several case studies for which the cyclic linearization logic seems to provide an insightful explanation. For example, if phasal domains are linearized once completed, wh-movement is forced to proceed cyclically, through intermediate steps, in order to preserve ordering statements. Evidence for successively-cyclic movement comes from different domains, e.g. reconstruction effects, wh-agreement, successive inversion, among others, which I will not review here (see van Urk 2019 for a review).[25]

Consider the following derivation where movement is not successive-cyclic:[26]

[25]This idea provides an alternative explanation to Chomsky's (2000; 2001) take on successive cyclicity based on the Phase Impenetrability Condition, according to which complements of phase heads are spelled out in the course of the derivation and only the phase heads and their edges are available for further computations.

[26]See Fox and Pesetsky 2005b for other formal definitions. Following the authors, I adopt the idea that ordering established at each phasal domain is stored in a linearization table. I will represent the resulting

(70) *Non-cyclic movement*

a. $[_{\text{PhaseP}_1}\ \beta\ [_{\text{XP}}\ \alpha]]$ $\{\beta \prec \alpha\}$

b. $[_{\text{PhaseP}_2}\ \alpha \overleftarrow{\quad\gamma\quad [_{\text{PhaseP}_1}\ \beta\ [_{\text{XP}}\ t_\alpha]]]}$ $\{\alpha \prec \gamma \prec \beta \prec \alpha\}$

Once PhaseP_1 is spelled-out, the ordering $\{\beta \prec \alpha\}$ is established and stored. The derivation proceeds and α moves across PhaseP_1. When PhaseP_2 is linearized, $\{\alpha \prec \gamma \prec \beta\}$ is added to the ordering table. The resulting ordering table, $\{\alpha \prec \gamma \prec \beta \prec \alpha\}$, has a conflict as α is required to precede and to follow γ and β.

The situation is different if α moves successive cyclically:

(71) *Cyclic movement*

a. $[_{\text{PhaseP}_1}\ \alpha \overleftarrow{\quad\beta\ [_{\text{XP}}\ t_\alpha]]}$ $\{\alpha \prec \beta\}$

b. $[_{\text{PhaseP}_2}\ \alpha \overleftarrow{\quad\gamma\quad [_{\text{PhaseP}_1}\ t_\alpha}\quad \beta\ [_{\text{XP}}\ t_\alpha]]]$ $\{\alpha \prec \gamma \prec \beta\}$

At Phase_1, $\{\alpha \prec \beta\}$ is established. α then moves and Phase_2 is linearized as $\{\alpha \prec \gamma \prec \beta\}$. Since precedence is a transitive relation, $\{\alpha \prec \gamma \prec \beta\}$ implies $\{\alpha \prec \beta\}$. No conflict arises.

If *v*Ps and CPs are phasal domains, wh-movement, for instance, is obliged to proceed cyclically to avoid conflicting linearization statements:

(72) I wonder $[_{\text{CP}}$ **which book** he $[_{v\text{P}}\ t$ thinks $[_{\text{CP}}\ t$ Mary $[_{v\text{P}}\ t$ read t]]]]

We now return to the *word order puzzle for verb-echo responses*.

ordering with $\prec$ for convenience.

3.2.3 Solving the *Word order puzzle for verb-echo responses*

Having established the availability of a derivation in terms of verb stranding clausal ellipsis for verb-echo answers in Brazilian Portuguese we will now tackle the *word order puzzle for verb-echo responses*.

Before I proceed, I would like to point out that a similar problem seems to arise in English pseudogapping, assuming that the remnant object undergoes object shift out of the *v*P. For the sake of illustration, assume, following Takahashi (2004) and Merchant (2008), that the object shift in pseudogapping targets a position higher than the final position of the bare verb in examples like the following:

(73) You might not believe me, but you will Bob ([$_{vP}$ believe *t*]).

One possibility we could consider is to postulate a lexical head that enforces both object shift out, moving the DP complement of the *v*P, *and obligatory* *v*P-ellipsis in the case of pseudogapping. Crucially, since ellipsis and movement are both packed in the very same lexical head, the movement that creates the forbidden word order will only occur when ellipsis also does. Though this gambit has been played by Merchant 2007 for pseudogapping and could be extended to verb-stranding clausal ellipsis in Brazilian Portuguese, I do not think this *brute-force* approach is particularly insightful. First, ellipsis seems most of the time to be optional. And second, when ellipsis seems obligatory, most of the time we can find some superficial problem with the non-elided form (Ross 1969; Perlmutter 1971; Chomsky 1972; Lasnik 2001b; Takahashi 2004 among many others).

Using the cyclic linearization framework, Takahashi 2004 claims that object shift in the non-elliptical version of (73) is blocked because {V$\prec$O} is established within the *v*P phase.

Moving the object above V after {V≺O} has been established would result in conflicting linearization statements (*{O≺V≺O}). The object would be required at the same time to follow and precede the verb. Since the verb is not pronounced in pseudogapping the conflict disappears. Deletion thus salvages a derivation that would otherwise be problematic at PF.[27]

Similarly, I suggest here that the ban on verb initial word order with transitive verbs in Brazilian Portuguese arises at PF as a result of linearizing the *v*P once completed. Like in Takahashi's analysis this word order restriction can thus be voided under ellipsis.

Let's see in detail how this works in the verb-echo answer domain. Consider the following example:

(74) *[$_{CP}$ trouxe [$_{IP}$ alguém *t* [$_{vP}$ *t* açucar]]].

[$_{CP}$ brought-3SG [$_{IP}$ someone *t* [$_{vP}$ *t* sugar]]]

'Someone brought sugar.'

We saw that verb-initial word order is often bad with transitive verbs in Brazilian Portuguese and I suggested that the explanation relies on the fact that *v*P is a cyclic domain.

In examples like these, once the *v*P is completed, the structure is linearized and

[27] In a different way, the analysis of pseudogapping provided in Lasnik 1999 likewise has a salvation by deletion flavor. Lasnik adopts Koizumi's 1995 split-VP hypothesis.

(i) You might not believe me, but you will [$_{VP}$ V$_{strong\text{-}F}$ [$_{AgrP}$ Bob ~~[$_{VP}$ believe$_{V}$ *t*]~~]]

The complement of the verb, *Bob*, moves to a functional projection, which Lasnik identifies as AgrP, in between the VP that introduces the internal argument and the VP that introduces the external argument. The strong feature on the topmost V attracts the relevant feature of *believe*, which becomes phonologically deficient, divided into two positions. There are two ways to rescue the structure, either by moving *believe* completely to V, reuniting it with the attracted feature, or by eliminating *believe*, the broken element, from the structure via VP ellipsis.

{S≺V≺O} is established. For the sake of exposition, I use the inflected form of the verb since the beginning of the derivation. Consider thus the initial *v*P:

(75) [$_{vP}$ alguém trouxe [$_{VP}$ t_{trouxe} açucar]]

[$_{vP}$ someone brought-3SG [$_{VP}$ $t_{brought}$ sugar]]

{ alguém ≺ trouxe ≺ açucar }

{ someone ≺ brought-3SG ≺ sugar }

The derivation proceeds, the verb moves to I^0, and the external argument moves to [Spec,IP], valuing I^0's ϕ-features:

(76) [$_{IP}$ alguém trouxe [$_{vP}$ $t_{alguém}$ t_{trouxe} [$_{VP}$ t_{trouxe} açucar]]]

[$_{IP}$ someone brought-3SG [$_{vP}$ $t_{someone}$ $t_{brought\text{-}3SG}$ [$_{VP}$ $t_{brought\text{-}3SG}$ sugar]]]

{ alguém ≺ trouxe ≺ açucar }

{ someone ≺ brought-3SG ≺ sugar }

In a regular transitive clause, the CP phase is linearized, the {S≺V≺O} word order is preserved and no conflicting ordering statements arise.

(77) [$_{CP}$ [$_{IP}$ alguém trouxe [$_{vP}$ $t_{alguém}$ t_v [$_{VP}$ t_{trouxe} açucar]]]]

[$_{CP}$ [$_{IP}$ someone brought-3SG [$_{vP}$ $t_{someone}$ t_v [$_{VP}$ $t_{brought\text{-}3SG}$ sugar]]]]

{ alguém ≺ trouxe ≺ açucar }

{ someone ≺ brought-3SG ≺ sugar }

On the other hand, if the verb moves to CP, the situation is different. The CP is completed and linearized, adding a conflicting ordering statement to the table:

(78) *[$_{CP}$ trouxe [$_{IP}$ alguém t_{trouxe} [$_{vP}$ $t_{alguém}$ t_{trouxe} [$_{VP}$ t_{trouxe}

[$_{CP}$ brought-3SG [$_{IP}$ someone $t_{brought\text{-}3SG}$ [$_{vP}$ $t_{someone}$ $t_{brought\text{-}3SG}$ [$_{VP}$ $t_{brought\text{-}3SG}$

açucar]]]]

sugar]]]]

{ trouxe $\prec$ alguém $\prec$ trouxe $\prec$ açucar }

{ brought-3SG $\prec$ someone $\prec$ brought-3SG $\prec$ sugar }

The verb is required to follow and precede the subject.

Now let us consider what happens in verb-echo answers.

(79) A: Alguém trouxe açucar? B: Trouxe.

someone brought-3SG sugar brought-3SG

'Did anyone bring sugar?' 'Yes, someone did.'

(80) [Context: A and B disagree on the facts]

A: Ninguém trouxe açucar. B: Trouxe, sim.

No-one brought-3SG sugar brought.3SG yes

'No-one brought-3SG sugar.' 'Yes, someone did.'

The crucial point here is that since the finite verb is the only syntactic object that will be pronounced, all the ordering statements making reference to elements marked for non-pronunciation will be removed from the ordering table, including those created at the *v*P level.

(81) *[$_{CP}$ trouxe ~~[$_{IP}$ alguém t_{trouxe} [$_{vP}$ $t_{alguém}$ t_{trouxe} [$_{VP}$ t_{trouxe}~~

[$_{CP}$ brought-3SG ~~[$_{IP}$ someone $t_{brought\text{-}3SG}$ [$_{vP}$ $t_{someone}$ $t_{brought\text{-}3SG}$ [$_{VP}$ $t_{brought\text{-}3SG}$~~

~~açucar]]]]~~

~~sugar]]]]~~

Trouxe

brought-3SG

'Yes, he did.'

The conflicting ordering statements are eliminated and the sentence can be properly pronounced. Verb-stranding clausal ellipsis accounts for the fact that subjects of verb-echo answer can have an indefinite or free-choice interpretation, while regular null subjects in the language cannot. The cyclic linearization framework provides a way out of the *word order puzzle for verb-echo responses* by relegating the ban on {V$\prec$S$\prec$O} word order to the PF component. The same rationale extends to free choice subjects.

3.2.4 Problems with alternative analyses

In this section, I entertain two alternative approaches. Though both allow the intended subject of verb-echo answers to have an indefinite interpretation without over-generating it elsewhere, they have some problems which make me favor the analysis pursued here.

The first alternative we can entertain would be to say that *v*P ellipsis can *bleed* EPP-effects. The subject would stay inside the ellipsis site and thus inherit an indefinite or free-choice interpretation similarly to my proposal.

(82) A: Alguém trouxe açucar?

someone brought-3SG sugar

'Did anyone bring sugar?'

B: [$_{IP}$ trouxe ~~[$_{vP}$ alguém *t* açucar]~~].

[$_{IP}$ brought-3SG ~~[$_{vP}$ someone *t* sugar]~~]

'Yes, someone did.'

This could be implemented in the following way.[28] I^0 has an EPP-feature, seen as strong-D, that attracts the closest D-feature, in this case from the indefinite in [Spec,*v*P]. The indefinite's D-feature moves to I^0, scattering the indefinite into two positions (i.e. its base position in [Spec,*v*P] and I^0). In order to avoid a PF problem, the derivation would in principle have two options. One would be to pied-pipe the indefinite to [Spec,IP], reuniting it with its lost D-feature. The other option would be to eliminate the now defective indefinite with *v*P-ellipsis. Through such an analysis we could say that Brazilian Portuguese lacks I-to-C movement altogether and that the 'underlying' {V≺S≺O} word order in verb-echo answers is a by-product of how ellipsis interacts with the EPP.

It is difficult to distinguish between the two approaches in Brazilian Portuguese. In English, however, we can clearly see that *v*P ellipsis cannot bleed the EPP-effect (Lasnik 2001a):

(83) a. Mary said she can't swim, even though she (really) can ~~*t* swim~~.

b. *Mary said she can't swim, even though (really) can ~~she swim~~.

[28]This alternative is inspired by Lasnik's 1999 analysis of pseudogapping. There the relevant movement is V-movement. See footnote 27

I thus reject this approach.

The second possibility is to assume non-constituent deletion (Morgan 1973; Ott and Struckmeier 2016; among others). The idea here is that focused material inside a constituent targeted for ellipsis is pronounced without having to evacuate such a constituent. Details apart, one could imagine an analysis along the following lines. First, finite verbs in Brazilian Portuguese move to a polarity head, say Laka's (1990) Σ^0, above IP and subjects move to [Spec,ΣP] for EPP reasons. Second, in verb-echo answers, the whole ΣP is marked for deletion. Finally, since verb-echo responses involve polarity focus of some sort, Σ^0 and the finite verb adjoined to it will survive.

(84) A: Alguém trouxe açucar?
someone brought-3SG sugar
'Did anyone bring sugar?'

B: ~~[$_{\Sigma P}$ alguém~~ [$_{\Sigma^0}$ trouxe] ~~açucar]~~.
~~[$_{\Sigma P}$ someone~~ [$_{\Sigma^0}$ brought-3SG] ~~sugar]~~
'Yes, someone did.'

With this analysis, no talk about word order is needed.

The problem with such an approach is that it makes wrong predictions for cases where sentence negation interacts with an indefinite subject in the verb-echo response.

Indefinite subjects scope over sentence negation.

(85) Alguém não usou o computador.
someone not used the computer
a. 'Someone didn't use the computer.' [$\exists > \neg$]

b. *‘No-one used the computer. [¬ > ∃]

In verb-echo answers however sentence negation scopes over the indefinite subject, as made evident by the translation of the following example:

(86) A: Alguém usou o computador. B: Não usou, não.
someone used the computer not used no
‘Someone used the computer.’ ‘No, nobody did.’

The representation of the verb-echo answer in (86) under the non-constituent deletion approach would give the wrong interpretation.

(87) A: Alguém usou o computador.
someone used the computer
‘Someone used the computer.’
B: *~~[$_{\Sigma P}$ alguém~~ [$_{\Sigma^0}$ não=usou] ~~o computador]~~, não.
~~[$_{\Sigma P}$ someone~~ [$_{\Sigma^0}$ not=used] ~~the computer]~~ no
‘No, someone didn’t used it.’

Under the approach taken here such examples can be accommodated easily. Since sentence negation is a verb clitic, it moves to C alongside the finite verb and from there it scopes over the indefinite subject.[29]

[29] I take the sentence negation clitic to be a negative operator. That is, it bears negative interpretation and it can license negative indefinites.

(88) A: Alguém usou o computador.

someone used the computer

'Someone used the computer.'

B: Não$_{\{Pol:Neg\}}$=usou ~~[$_{IP}$ ninguém$_{\{Infl[Pol:Neg]\}}$ *t* o computador]~~, não.

not$_{\{Pol:Neg\}}$=used ~~[$_{IP}$ nobody$_{\{Infl[Pol:Neg]\}}$ *t* the computer]~~ no

'No, nobody did.'

Having rejected alternative analyses, I now consider cases where the restriction on verb initial word order in Brazilian Portuguese seems to be void but without ellipsis taking place.

3.3 Reordering illusions

In this section I discuss some potential issues that might arise from the analysis presented here. These are cases where the subject of a transitive clause or material associated with it seems to appear in a post-verbal position, apparently violating the {S$\prec$V$\prec$O} order established once the *v*P is linearized. I suggest that all such cases can receive an alternative analyses where the putative reordering of the *v*P-internal material is illusory. The discussion is mostly tentative, pointing to future research.

3.3.1 Imperative subjects

The first case I consider is that in the imperative mood subjects in Brazilian Portuguese seem to have a flexible position in the clause. Brazilian Portuguese has two types of imperatives, the *true imperative* and the *suppletive* or *surrogate imperative* (see Rivero 1994; Scherre, Cardoso, Lunguinhu, and Salles 2007; and references therein). In both

cases the subject can appear in several positions in the clause (Cavalcante and Simioni 2015; Scherre et al. 2007):

(89) *True imperatives*

a. Traz o livro.
bring-IMP.SG the book
'Bring the book.'

b. Você, traz o livro.
you bring-IMP.SG the book
'*You* bring the book.'

c. Traz, você, o livro.
bring-IMP.SG you the book
'*You* bring the book.'

d. Traz o livro, você.
bring-IMP.SG the book you
'*You* bring the book.'

(90) *Suppletive imperatives*

a. Traga o livro.
bring-SUBJ.SG the book
'Bring the book.'

b. ?Você, traga o livro.
you bring-SUBJ.SG the book
'*You* bring the book.'

c. Traga, você, o livro.
bring.SUBJ.SG you the book
'*You* bring the book.'

d. Traga o livro, você.
bring-SUBJ.SG the book you
'*You* bring the book.'

The analysis proposed here seems at first sight too strong to account for the possible placements of the imperative subject.

Much of the literature on imperatives, however, shares the idea that the imperative formative itself, arguably above the *v*P, introduces a second person argument, often null, which can control the subject of the predicate in its scope (see Rupp 1999; Han 1998; Jensen 2003; Bennis 2006; Zanuttini 2008 among others for different implementations). In principle, the second person pronoun in the examples above can be taken as the argument

introduced by the imperative formative, arguably outside the *v*P. If so, such a pronoun won't be linearized alongside other *v*P internal material when the *v*P is linearized.

Adapting the analysis presented in Han 1998, who takes the *v*P internal subject to be a PRO element bound by an argument introduced by the imperative formative, and the analysis presented in Zanuttini 2008, who identifies the imperative formative as a jussive head, we can assume the following structures:[30]

(91) [$_{\text{JussiveP}}$ *pro*$_1$ Jussive^0 [$_{v\text{P}}$ PRO$_1$ traz o livro]]
[$_{\text{JussiveP}}$ *pro*$_1$ Jussive^0 [$_{v\text{P}}$ PRO$_1$ bring-IMP.SG the book]]

(92) [$_{\text{JussiveP}}$ Você$_1$ Jussive^0 [$_{v\text{P}}$ PRO$_1$ traz o livro]]
[$_{\text{JussiveP}}$ you$_1$ Jussive^0 [$_{v\text{P}}$ PRO$_1$ bring-IMP.SG the book]]

In (91) the jussive head introduces a null argument and in (92) the jussive head introduces an overt argument. Discussing the exact structure of our baseline examples would take us too far afield. The important point is that, since the second person pronoun is merged outside the *v*P in these examples, it is not require to precede the verb and the verb complement. As a result, reordering is possible.

3.3.2 *v*P-fronting

Another potential concern with the analysis presented here arises in cases of *v*P-fronting, possible in the language:

[30] Zanuttini 2008 actually argues the *v*P subject is bound by the person features specified in the jussive head.

(93) a. Trazer o bolo, o Pedro não vai.
bring-INF the cake the Peter not will
'Bring the cake, Peter won't.'

b. Criticando o João, o Pedro não estava.
criticizing the John the Peter not was
'Criticizing John, Peter wasn't.'

I suggest that *v*Ps headed by auxiliary verbs can also introduce DPs, which will bind a PRO in the specifier position of the *v*P headed by the main verb.[31]

(94) a. [$_{vP/InfinitiveP}$ PRO$_1$ trazer o bolo], o Pedro$_1$ não vai [$_{vP}$ t_{vP} t_1 t_{vai} t_{vP}].
[$_{vP/InfinitiveP}$ PRO$_1$ bring-INF the cake] the Peter$_1$ not will [$_{vP}$ t_{vP} t_1 t_{will} t_{vP}]
'Bring the cake, Peter won't.'

b. [$_{vP/PartP}$ PRO$_1$ criticando o João], o Pedro$_1$ não estava [$_{vP}$ t t_1 t_{estava} t]
[$_{vP/PartP}$ PRO$_1$ criticizing the John] the Peter$_1$ not was [$_{vP}$ t t_1 t_{was} t]
'Criticizing John, Peter wasn't.'

With this assumption, the grammatical subject is not necessarily linearized alongside a

[31] I tentatively assume that *v*Ps headed by auxiliary verbs are also linearization domains. The reason is that typically subjects precede auxiliary verbs.

(i) a. O João tinha comido o bolo.
the John had eaten the cake
'John had eaten the cake.'
b. *Tinha o João comido o bolo.
had the John eaten the cake
'John had eaten the cake.'

I leave issues that arise with auxiliary verbs for future research.

verb and its complement if the *v*P is embedded under an auxiliary verb and {S≺V≺O} is again not enforced after the *v*P is completed.

3.3.3 Quantifier float

The final potential issue I would like to address arises from the possibility of floating quantifiers in the language:

(95) Os alunos leram todos esse livro.
the students read all this book
'All the students read this book.'

If floated quantifiers are merged with the subject in [Spec,*v*P], and left behind when the subject moves to [Spec,IP] (Sportiche 1988; Koopman and Sportiche 1991; among others), examples like these should be bad, since the moved verb would be required to precede and to follow the quantifier.

(96) Os alunos leram [$_{vP}$ [$_{QP}$ todos *t*] *t* esse livro].
the students read [$_{vP}$ [$_{QP}$ all *t*] *t* this book]
'All the students read this book.'

There is however an alternative analysis for quantifier float (David and Brodie 1984; Bobaljik 1995; Doetjes 1997 among others), according to which the floating quantifier is actually an adverbial-like element. Under such an approach, the problem does not arise, provided that the quantifier is base generated outside the *v*P:

(97) Os alunos$_1$ leram [$_{QP}$ todos *pro*$_1$] [$_{vP}$ *t* *t* esse livro].

the students$_1$ read [$_{QP}$ all *pro*$_1$] [$_{vP}$ *t* *t* this book]

'All the students read this book.'

Quantifier float thus does not necessarily pose a problem for the analysis proposed in this chapter.

3.4 Conclusion

In this chapter, I presented an analysis of verb-echo answers in Brazilian Portuguese. The problem with verb-echo answer is that they seem to require a word order that is not available in the language. This restriction was taken to be phonological in nature and thus repaired by deletion.

Chapter 4: Three case studies

In this chapter, I present one novel case of salvation by deletion and two novel cases of non-salvation by deletion.

The new example of repair involves a restriction of extraction in perfect clauses in Nupe. This case study will provide us with a way to directly compare the cyclic linearization approach to phases (Fox and Pesetsky 2005b, among others), used in the last chapter, with Chomsky 2000, 2001's phase impenetrability condition. It will be shown that while cyclic linearization can provide a straightforward explanation to the phenomenon, the PIC requires further stipulations. The two examples of non-salvation by deletion I present here involves intervention effects in A-movement and locality restrictions on head movement.

4.1 Perfect domains[1]

In this section, I present a novel case of salvation by deletion, related to extraction restriction in perfect clauses in Nupe (Kandybowicz 2009). The phenomenon will allow us to directly compare two approaches to phasal domains, namely the cyclic linearization framework (Fox and Pesetsky 2005b) and the phase impenetrability condition (Chomsky 2000, 2001). I start this section with a brief summary of the analysis of this restriction

[1]The novel data presented in this subsection comes from work in collaboration with Jason Kandybowicz (Mendes and Kandybowicz in prep).

presented in Kandybowicz 2009. I then show that ellipsis can repair the otherwise illicit movement (Mendes and Kandybowicz in prep), and present an analysis in terms of cyclic linearization.

In Nupe, there is an extraction restriction in perfect clauses. While A′-extraction of subject and TP-level adverbs is possible, extraction of *v*P-internal material (e.g. complements, low adjuncts and material inside clausal complements) is not. This asymmetry is exemplified in (1):[2]

(1) a. Zèé á eci pa o?
who PRF yam pound.PST FOC
'Who has pounded the yam?'

b. *Ke Musa á *t* pa o?
what Musa PRF *t* pound.PST FOC
'What has Musa pounded?'

c. *Bà-bo Musa á le *t* o?
where-LOC Musa PRF sleep.PST *t* FOC
'Where has Musa has slept?'

d. *Zèé Musa á *t* yà èwò o?
Who Musa PRF *t* give.PST garment FOC
'Who has Musa given the garment to?'

[2]The same holds for relativization and focus movement. See (Kandybowicz 2009), for a more complete data set with different types of A′-extraction. Kandybowicz also shows that extraction out of unnacusative *v*Ps is possible.

Also, regarding the glosses, in clauses with the perfect marker and without an overt tense marker, the main verb is glossed as V.PST. It should be noticed though that these are bare forms of the verb.

The contrast between perfect and non-perfect clauses is exemplified in (2d) with object extraction:

(2) a. Ke Musa pa *t* o?
what Musa pound.PST *t* FOC
'What did Musa pound?'

b. Ke Musa è pa *t* o?
what Musa PRES pound *t* FOC
'What is Musa pounding?'

c. Ke Musa à pa *t* o?
what Musa FUT pound *t* FOC
'What will Musa pound?'

d. *Ke Musa á pa *t* FOC?
what Musa PRF pound.PST *t* FOC
'What has Musa pounded?'

(adapted from Kandybowicz 2009, p.306)

Kandybowicz 2009 also notes that this extraction restriction aligns with another property of Nupe syntax which I now turn to.

First, in the non-perfect clauses, the verb precedes its arguments, whereas, in perfect clauses, accusative objects precede the verb:

(3) a. Musa è/à si dukùn.

Musa PRES/FUT buy pot

'Musa is buying/will buy the pot.' {V≺O}

b. Musa á dukùn si.

Musa PRF pot buy.PST

'Musa has bought the pot.' {O≺V}

c. Musa á le kata-o.

Musa PRF sleep.PST room-LOC

'Musa has slept in the room.' {V≺O}

(adapted from Kandybowicz 2009, p.309)

Second, while tense markers are instances of I^0, the perfect marker, *á*, is identified as *v*. Evidence for this position comes, for instance, from the fact that tense markers and the perfect particle can appear in the same clause:

(4) Musa (g)à dàdà á nakàn ba aní.

Musa FUT quickly PRF meat cut already

'Musa will have quickly cut the meat already.'

(adapted from Kandybowicz 2009, p.310)

To account for these two facts, Kandybowicz (2009), following Kandybowicz and Baker 2003, assumes that accusative objects are licensed in Agr_O projection in between the *v* and the VP[3]. In non-perfect clauses, V moves to *v* giving rise to the {V≺O} word order (see

[3] Kandybowicz (2009) actually used $\sqrt{}$P instead of VP, which is orthogonal to the main point.

(5b)). In perfect clauses, on the other hand, V is prevented from moving to *v* because that position is already occupied by the perfect particle giving rise of the {O≺V} word order (see (6b)).

(5) a. Musa si dùkùn.

Musa buy.PST pot

'Musa bought the pot.'

b. [$_{vP}$ Musa **si** [$_{Agr_OP}$ dùkùn *t* [$_{VP}$ *t* $t_{dùkùn}$]]].

[$_{vP}$ Musa **buy** [$_{Agr_OP}$ pot *t* [$_{VP}$ *t* t_{pot}]]]

'Musa bought the pot.'

(6) a. Musa á dùkùn si.

Musa PRF pot buy.PST

'Musa has bought the pot.'

b. [$_{vP}$ Musa á [$_{Agr_OP}$ dùkùn **si** [$_{VP}$ *t* $t_{dùkùn}$]]].

[$_{vP}$ Musa PRF [$_{Agr_OP}$ pot **buy** [$_{VP}$ *t* t_{pot}]]]

'Musa has bought the pot.'

With this in mind, let us consider Kandybowicz's analysis of the extraction restriction in perfect clauses. The basic intuition here is that perfect *v*Ps do not allow successive-cyclic movement and thus A′-extraction of *v*P-internal material will always be "too long". How to implement "too long" here is an issue which I will return to momentarily. Kandybowicz observes that the extraction restriction in perfect clauses in Nupe is at odds with Chomsky's conjecture that edge-features are *inherent properties of strong phase heads* (Chomsky 2007,

2008), which would always allow cyclic movement. Kandybowicz's insight is that the extraction restriction in perfect clauses arises when the verb is prevented from moving to *v*. He argues that edge-features have to be activated by agreement. In our case, the relevant agreement relation would the one established between *v* and V as a precondition on moving V to *v* in non-perfect clauses. In non-perfect clauses the edge-feature of *v* is activated and extraction of *v*P-internal material can proceed successive-cyclically through the edge of the *v*P. In perfect clauses, where V does not move to *v*, *v* does not enter in an agreement relation and, as a result, its edge-feature is not activated giving rise to the extraction restriction on perfect clauses. That is, since perfect *v*Ps will not allow successive cyclic movement, A′-extraction of *v*P internal material will be too long.[4]

The novel observation here is that apparent violations of the extraction restriction in perfect clauses are subject to salvation by deletion. As shown in the following examples, the otherwise illicit movement is possible inside ellipsis:[5]

Nupe repair: example 1

(7) *Ke Musa á *t* pa o?

what Musa PRF *t* pound.PST FOC

'What has Musa pounded?' (repeated from (1b))

[4] Kandybowicz points out several consequences of this system, one of which is that it prevents gratuitous non-interrogative/focal movement to [Spec,CP]:

(i) a. *Smith thought *Barriers* that Chomsky wrote *t*.
b. *Smith knows *will* Chomsky *t* write a book on phases.
(adapted from Kandybowicz 2009)

[5] Nupe does not have embedded questions. This is why all the testing examples are matrix sluicing.

(8) A: Musa á ejan ndoci pa.

Musa PRF thing certain pound.PST

'Musa has pounded something.'

B: Ké o?

what FOC

'What?' ('What has Musa pounded?')

(Mendes and Kandybowicz in prep)

Nupe repair: example 2

(9) *Bà-bo Musa á le *t* o?

where-LOC Musa PERF sleep.PST *t* FOC

'Where has Musa has slept?' (repeated from (1c))

(10) A: Musa á le ebà ndoci o.

Musa PRF sleep.PST place certain LOC

'Musa has slept somewhere.'

B: Bà-*(bo) o?

where-LOC FOC

'Where?' ('Where has Musa slept?')

(Mendes and Kandybowicz in prep)

Nupe repair: example 3

(11) *Zèé Musa á *t* yà èwò o?

Who Musa PRF *t* give.PST garment FOC

'Who has Musa given the garment to?' (repeated from (1d))

(12) A: Musa á eza ndoci yà èwò.

Musa PRF person certain give.PST garment

'Musa has given someone the garment.'

B: Zèé o?

who FOC

'Who?' ('Who has Musa given the garment to.')

(Mendes and Kandybowicz in prep)

Nupe does not seem to have any grammatical devices to circumvent this restriction.[6] In chapter 2, I also discussed, and rejected, the idea that sluicing can have a copular source, which could circumvent islandhood in the ellipsis site in languages in cases of apparent island repair. The general argument came from case-matching effects, which consistently obtain in languages with overt case morphology. Case-matching effects suggest that the ellipsis site needs to be to some degree isomorphic to its antecedent. It is thus unlikely that the amelioration effects under sluicing that we see in (8), (10) and (12) come from a hidden copular source as an alternative to a clause in the perfect (e.g. *{who/where} ~~was it~~?*).

There is also more direct evidence internal to the Nupe language suggesting that we are not dealing with non-isomorphic copular sources. First, a potential overt copular/cleft

[6] Jason Kandybowicz pers. comm.

construction that could evade the perfect clause inside the ellipsis site has not been identified in the language to this point. Second, copulas typically entail exhaustivity and thus can be used to control for copular sources in the ellipsis site (Merchant 1999, p.164). This can be exemplified with the example (13) below. Though sluicing is possible a copular/cleft clause does not make for a good continuation:

(13) Harry was there, but I don't know who else (*it was).

The following examples show that the repair effects arise with else-modification, which suggest there is no copular source hidden in the ellipsis site:

(14) A: Musa á eci pa.
Musa PRF yam pound.PST
Musa has pounded the yam.'
B: Ké be o?
what else FOC
'What else?' ('What else has Musa pounded?')

(15) A: Musa á le kata o.
Musa PRF sleep.PST room LOC
'Musa has slept in the room.'
B: Bà-bo be o?
where-LOC else FOC
'Where else?' ('Where else has Musa slept?')

We are now in a position to compare two approaches to phasal domains. In Chomsky 2001 and subsequent work, successive-cyclic movement is enforced by the Phase Impenetrability Condition where H is a phase head:[7]

(16) *Phase Impenetrability Condition (PIC)*

The domain of H is not accessible to operations outside HP; only H and its edge are accessible to such operations.

(Chomsky 2000, p. 13)

If the perfect v^0 cannot provide an escape hatch, the PIC correctly predicts the extraction restriction in perfect clauses. Notice, however, that the PIC is stated as a derivational constraint. The repair effect that we have just seen thus remain mysterious. In order to accommodate the data above, further stipulations would have to be made. The intuition would be that movement violating the PIC is indeed possible, but it somehow damages the representation. One possible way to implement this idea is to resort to the *-feature in line with Chomsky 1972, that we saw in chapter 2. That is, derivations are allowed to violate the PIC, but some relevant portion of the structure, either the trace of the moved element or the spelled-out VP itself is assigned a *-diacritic. Deletion, by removing the portion of the structure containing the *-feature would be able to save the derivation.

The cyclic linearization framework explored in the last chapter can provide a straightforward approach to the repair phenomenon we are dealing with without resorting to the *-feature. Consider for instance, the examples in (8) and (14). Once the *v*P is completed, it is linearized as $\{S \prec PRF \prec O \prec V\}$. If the objects is to be extracted, it

[7] Chomsky 2001, p. 14 presents a slightly weaker formulation of the PIC. Both formulations will give the same result for the discussion.

has to move to the edge of the *v*P to avoid a linearization contradiction. Since perfect *v*s do not enter in an agreement relation (remember that direct objects in the proposal are licensed in [Spec,Agr$_O$] and not by agreeing with *v*), *v*'s edge-feature will not be activated and movement of objects and low adjuncts has to be done in one fell-swoop to [Spec,CP] creating contradictory linearization statements once the CP is linearized. Specifically, the wh-object will be required to follow and precede the subject and the perfect marker: {O$\prec$S$\prec$PRF$\prec$O$\prec$V}. Since ellipsis in (8), (10) and (12) eliminates the *v*P and the linearization statements involving elements inside it, the contradiction disappears and the derivation converges.

Adapting Kandybowicz 2009's analysis to the cyclic linearization approach provides a more insightful way of analyzing the repair effect that we have just seen by not resorting to *-feature.

4.2 Intervention in A-movement

I will now consider a novel case of non-salvation by deletion involving A-movement. Consider the following examples:

(17) a. (i) John didn't buy a car; Mary$_1$ did [$_{vP}$ t_1 buy a car].

(ii) John didn't buy a car; Mary$_1$ did ~~[$_{vP}$ t_1 buy a car]~~.

b. (i) *John didn't buy a car; a bike$_2$ did [$_{vP}$ John buy t_2].

(ii) *John didn't buy a car; a bike$_2$ did ~~[$_{vP}$ John buy t_2]~~.

(18) a. (i) John wasn't given a car; Mary$_1$ was [$_{vP}$ t_1 given a car].

(ii) John wasn't given a car; Mary$_1$ was ~~[$_{vP}$ t_1 given a car]~~.

b. (i) *John wasn't given a car; a bike$_2$ was [$_{vP}$ John given t_2].

(ii) *John wasn't given a car; a bike$_2$ was ~~[$_{vP}$ John given t_2]~~.

In (18) the object moves to [Spec,IP] across the intervening predicate internal subject. In (18) the lower object moves to [Spec,IP] across the intervening higher objects. We can see in (17b-ii) and (18b-ii) that *v*P-ellipsis is not capable of repairing the problem.

It is worth noting that there are different takes in the literature on agreement, case assignment and A-movement to [Spec,IP] (Chomsky 1995, 2000; Koopman 2006; Preminger 2014; Bjorkman and Zeijlstra 2019; among many others). The problem with the examples above might be interpreted in different ways depending on the analytical choice. While it is not my goal to choose among these options nor to see how the data above fits each of these theories, all of them have to provide an explanation for why the complement cannot move across the subject, and I believe the explanation of and will have to pick up on the intervening subject in the predicate internal position.

Given our discussion so far, the intervention effects that we see here with A-movement has to be taken as a derivational constraint since salvation by deletion is not possible. This finding fits well with the discussion of superiority effects, another case of intervention, from section 2.3.3. There, we saw that sluicing cannot repair superiority violations:

(19) Ivan i Marko ne znaju ...
Ivan and Marko NEG know
'Ivan and Marko don't know ...'

a. **ko** je **šta** kupio.
who is **what** bought

b. *__šta__ je __ko__ kupio.

__what__ is __who__ bought

'Who bought what.'

(Serbo-Croatian: adapted from Boeckx and Lasnik 2006, p. 152)

(20) a. Njakoj e vidjal njalcogo, no ne znam __koj kogo__.

someone AUX seen someone but not I.know __who whom__

b. *Njakoj e vidjal njakogo, no ne znam __kogo koj__.

someone AUX seen someone but not I.know __whom who__

'Someone saw someone, but I don't know who saw who.'

(Bulgarian: adapted from Merchant 1999, p. 147,148)

Another point worth emphasizing is that the intervention effect with A-movement provides novel evidence that there is syntactic structure in the ellipsis site. For instance, if the elided *v*P were taken to be a pro-form without internal structure, it is unclear how the effects in (17b) and (18b) could be explained. The intervention effects in (17b-ii) and (18b-ii) can easily be accounted for if the omitted *v*P has regular, though unpronounced, syntax.

4.3 Head Movement

In this section, I consider how ellipsis interacts with locality constraints on head movement (see Travis 1984; Chomsky 1986a; Baker 1988; Bobaljik and Brown 1997; Koeneman 2000; Koopman and Szabolcsi 2000; Brody 2000; Chomsky 2001; Matushansky 2006; Roberts 2010; Funakoshi 2014 among many others; see also Dékány 2020 for a

critical assessment of different approaches to head movement).

A good starting point when discussing locality constraints on head movement is Travis's 1984 Head Movement Constraint, which requires head movement to be upwards and maximally local.

The examples in (21b) and (22b) are two candidates of head movement constraint violations, where heads crossed by HM are marked in italics. For the sake of exposition, assume for now that auxiliaries and copula *be* project a VP, and their tensed forms are the result of V-to-I^0 movement:

(21) a. **Can** John be happy?

b. *__Be__ John *can* t_{be} happy?

(22) a. John can [$_{VP}$ t_{can} be happy].

b. *John **is** *can* t_{be} happy.

In (21b), *be* moves to C crossing *can*; in (22b), *be* moves to T crossing *can*.

Ellipsis does not seem to make the examples any better:

(23) A: John can be happy.

B Can he ~~[$_{VP}$ t_{can} [$_{VP}$ be happy]]~~?

B′: *__Be__ he *can* ~~[$_{VP}$ t_{can} [$_{VP}$ t_{be} happy]]~~?

(24) a. Mary can be happy and John can ~~[$_{VP}$ t_{can} [$_{VP}$ be happy]]~~ too.

b. *Mary can be happy, and John **is** ~~[$_{VP}$ *can* [$_{VP}$ t_{be} happy]]~~ too.

All the examples above have confounds, though, as discussed in Lasnik 2000, sections

3.4.4/3.4.6. Question formation in English requires I^0-to-C^0 movement. If so, bare *be* is not eligible to raise to C in (21b) and (23). Also, *can*, like some other English modals, lacks untensed forms (**must* ***can***, **will* ***can***, **is* ***can(ing)***, **does* ***can***, ...), so (22b) and (24b) might be independently bad because *be* 'steals' I^0 from *can*. Finally, in (23), a head crossed by head movement stays outside the ellipsis site rendering the example irrelevant to the discussion since the head movement constraint violations are not properly included in the ellipsis site.

Consider now the following examples, which control for such interfering factors:

(25) a. (i) John doesn't seem to be happy.

(ii) *John **is** *seem to* t_{be} happy.

b. (i) Peter seems to be happy, but John doesn't ~~[$_{VP}$ seem to be happy]~~

(ii) *Peter seems to be happy, but John **is**n't ~~[$_{VP}$ *seem to* t_{be} happy]~~.

(26) a. (i) Ann appears to have been sick.

(ii) *Ann **has** *appear to* t_{have} been sick.

b. (i) Mary appears to have been sick, and Anna does ~~[$_{VP}$ appear to have been sick]~~ too.

(ii) *Mary appears to have been sick, and Anna **has** ~~[$_{VP}$ *appear to* t_{have} been sick]~~ too.

The head movement constraint is violated in (25a-ii) and (25b-ii), as the heads *seem* and *to* are crossed by the moving copula. Likewise, the head movement constraint is also violated in (26a-ii) and (26b-ii) where *appears* and *to* are crossed by the auxiliary *have* on its way up to matrix I^0. We find no amelioration under ellipsis in (25b-ii) and (26b-ii)

though, which suggests that a head movement constraint violation cannot be repaired by deletion.

We should also check for other potential interfering factors here.

First, notice that head movement from a 'reduced' extended projection to another extended projection is what we find in noun incorporation:

(27) Juan ngilla-**waka**-fi-y [$_{NP}$ t_{waka} Pedro].
Juan buy-**cow**-30-IND.3S.S [$_{NP}$ t_{cow} Pedro]
'Juan bought Pedro's cow.' (Mapudungun, adapt. from Baker, Aranovich, and Golluscio 2005, p. 167)

So the fact that *be* moves to a distinct extended projection should not be a problem in (25a-ii), (25b-ii), (26a-ii), and (26b-ii).

Second, notice that *be* can move to I^0 outside a deleted VP whose antecedent clause does not have *be* in a parallel position. The examples in (28a) show that English does not have productive AP-ellipsis, which implies that the example in (28b) has a derivation along the lines just described.

(28) a. (i) *Peter isn't being noisy, but John is [$_{VP}$ being ~~[$_{AP}$ noisy]~~].
(ii) Peter isn't being noisy, but John is ~~[$_{VP}$ being [$_{AP}$ noisy]]~~.
b. Peter is [$_{VP}$ **be**ing [$_{AP}$ noisy]], he always **is** ~~[$_{VP}$ t_{be} [$_{AP}$ noisy]]~~.

The problem with (25b-ii) and (26b-ii), therefore, is unlikely to be lack of parallelism.

Finally, we should also consider the possibility of *seem* being introduced by $v_{i(ntransitive)}$ and issues that might arise from that - I am not aware of any indication of yet another

obligatory distinct layer, say VoiceP, on top of the *v*P above *seem* (cf. **John was seemed to be happy.*), so I won't consider this possibility here. Regardless of the presence of v_i, it is unlikely that a locality issue other than the head movement constraint is at play in (25b-ii) and (26b-ii). v_i's introducing verbs like *seem* and *appear*, which do not require an external argument, are weak phase heads (Chomsky 2001), I^0 and VP internal material can arguably be syntactically related as shown in (29), and there is no other potential phasal domain in between I^0 and *be* in (25b-ii) and (26b-ii).

(29) Henni **höfðu** leiðst **Þeir**.
her.DAT had.3PL bored.at they.NOM
'She had found them boring.' (Icelandic; Sigurðsson 2002:692)

Consider now the possible parses for (25b-ii) and (26b-ii) assuming *seem* is introduced by v_i in (30) and (31) respectively:

(30) a. ... but John **is**n't [$_{vP}$ v_i ~~[$_{VP}$ *seem to* t_{be} happy]~~].
b. ... but John **is**n't ~~[$_{vP}$ v_i [$_{VP}$ *seem to* t_{be} happy]]~~.

(31) a. ... and Anna **has**n't [$_{vP}$ v_i ~~[$_{VP}$ *appear to* t_{have} been sick]~~].
b. ... and Anna **has**n't ~~[$_{vP}$ v_i [$_{VP}$ *appear to* t_{have} been sick]]~~.

Under (30a) and (31a), one of the heads crossed by head movement stays outside the ellipsis site, which would void the example for the discussion. However, it seems that *v*'s have to stay inside the ellipsis site to prevent overgeneration of verb phrase ellipsis in case *v* in the ellipsis site and *v* in the antecedent do not match, i.e. $v_{\text{i(ntransitive)}} \neq v_{\text{t(ransitive)}}$ (Merchant 2013b and references therein):

(32) This can [$_{vP}$ $\boxed{v_i}$ [$_{VP}$ freeze t_{this}]]. *Please do ~~[$_{vP}$ $\boxed{v_t}$ [$_{VP}$ freeze this]]~~

(33) *Bill [$_{vP}$ $\boxed{v_t}$ [$_{VP}$ melt-ed this]], and that did ~~[$_{vP}$ $\boxed{v_i}$ [$_{VP}$ melt t_{that}]]~~, too

It seems that head movement constraint violations indeed cannot be repaired by deletion.

I assume that head movement constraint violation are instances of intervention, a derivational constraint, and as such cannot be repaired by deletion.[8]

4.4 Conclusion

In this chapter we saw three case studies. In the first, we saw that ellipsis can salvage violation of extraction restrictions in perfect clauses in Nupe. I also showed that while the phase impenetrability condition requires further stipulations to account for the data, the pattern follow naturally from cyclic linearization. We then consider intervention effects in A-movement, where ellipsis does not seem to induce any repair effect. This also provides one more piece of evidence that there is unpronounced structure in the ellipsis site. Finally, we consider head movement constraint violations, which like other types of intervention effects, cannot be repaired by deletion.

[8] In principle, the head movement constraint could also be derived from the ECP (Chomsky 1986a). If so, we should not expect amelioration effects assuming ellipsis is PF-deletion and the ECP is an LF representational constraint (see discussion in section 2.3.6). I will leave the evaluation of this option for future research.

Chapter 5: Salvation and non-salvation of defectiveness under ellipsis[1]

I present what I contend are bona-fide cases of salvation and non-salvation by deletion, in the context of *defective* verbs, as a way to probe into lexical representations. It has been previously demonstrated that what would otherwise be ineffable gaps in a verbal paradigm seem to be able to appear inside ellipsis sites. Thus, the Russian stripping examples shown in (1) are good, despite the fact that the neither *buzit'* 'to make a fuss' nor *šelestet'* 'to rustle' have a proper form for first person singular non-past:

(1) On {buzit /šelestit }, a ja net.
he {makes.a.fuss /rustles } but I not
'He {makes a fuss/ rustles} but I don't.' (adapted from Abels 2018)

Similar observations have been made for lexical gaps in other domains; cf. Oku 1998; Kennedy and Merchant 2000; Kennedy and Lidz 2001; Merchant 2015. The intuition behind these works is that lexical gaps, such as the 1SG non-past for the verbs above, arise from the lack of a proper allomorph. Crucially, if ellipsis is an instruction to prevent morphophonological realization, the problem doesn't arise inside the ellipsis site. This logic, I will show, is only partially correct, as some lexical gaps *cannot* be saved by ellipsis.

[1] A slightly different version of this chapter has been submitted as a paper co-authored with Andrew Nevins (Mendes and Nevins submitted)

I thus distinguish two types of defective verbs: (i) defective verbs that can be saved by deletion, which I take to lack an eligible allomorph for certain environments within a language, and (ii) defective verbs that cannot be saved by deletion, which I take to signal the lack of a formative (i.e. a possible item in the numeration that provides the input to syntax within a given language) necessary to build certain structures within a language.[2]

I will start by reviewing some cases of salvation by deletion in the realm of defectiveness that have been discussed in the literature. I will then discuss some case studies in Brazilian Portuguese, Russian and English.

5.1 Salvation by deletion

5.1.1 Brazilian Portuguese defective verbs

To illustrate the cases of salvation by deletion in Brazilian Portuguese I will use the defective verb *demol-i-r* ($\sqrt{\text{DEMOLISH}}$-TV-INF)[3] 'to demolish', which lacks the first person singular present indicative and all forms of the present subjunctive (see Nevins, Damulakis, and Freitas 2014 and references mentioned there). These gaps arise precisely where non-defective verbs lose their thematic vowel in the verbal paradigm, as shown in the following table, in which each verb form is split into three slots ROOT-TV-T/AGR:[4]

I will compare the behavior of non-defective verbs with defective verbs.

Taking the absence of the theme vowel to be a result of *v* obliteration,[5] I assume that the

[2]This second type can also be thought of as lack of a proper *morpheme*.

[3]TV= theme vowel; INF = infinitive.

[4]*V indicates a gap. The *V in the tables and examples I present do not represent the judgement itself, but rather that speakers are uncomfortable with potential forms that could arise for the gap.

[5]Obliteration is a morphological procedure that completely eliminates a syntactic node (Arregi and Nevins 2014). For a phonological take on the missing theme vowel in the Portuguese and Spanish paradigm, see Camara Jr 1970 and Bermúdez-Otero 2012 respectively.

	PRESENT INDICATIVE		PRESENT SUBJUNCTIVE	
1sg	vot-Ø-o	*V	vot-Ø-e	*V
2sg, 3sg, 1pl	vot-a-Ø	demol-e-Ø	vot-Ø-e	*V
2pl, 3pl	vot-a-m	demol-e-m	vot-Ø-em	*V
infinitive	vot-a-r 'to vote'	demol-i-r 'to demolish'	vot-a-r 'to vote'	demol-i-r 'to demolish'

Table 5.1: Brazilian Portuguese: comparison between the non-defective verb *vot-a-r* ($\sqrt{\text{VOTE}}$-TV-INF) 'to vote' and the defective verb *demol-i-r* ($\sqrt{\text{DEMOLISH}}$-TV-INF)

root of *demol-i-r* 'to demolish' can only be realized in the presence of *v* (see Arregi and Nevins 2014; Nevins et al. 2014, and references therein for further discussion):

(2) $\sqrt{\text{DEMOLISH}} \leftrightarrow$ /demol/ /_ *v* (no elsewhere item)

Consider first gapping, which I take to involve ellipsis of some portion of structure that includes the verb.[6]

(3) *Brazilian Portuguese: gapping with non-defective and defective verbs*

a. Você vota *(n)o Pedro, e eu ~~voto~~ *(n)a Maria.
you vote on-the Peter and I ~~vote~~ on-the Mary
'You vote for Peter, and I for Mary.'

b. Você demole a casa, e eu ~~*V~~ o prédio.
you demolish the house and I ~~demolish~~ the building
'You demolish the house, and I demolish the building.'

(3a) shows that the remnant portion corresponding to the complement of the verb in the gapped clause preserves the selectional properties of the verb inside the ellipsis site. *votar*

[6]See Ross 1967, Pesetsky 1982, Jayaseelan 1990, among others, though see Johnson 2009 for a different analysis.

'to vote' selects a PP and this property is preserved in the gapped clause. This selectional connectivity implies that the root in the ellipsis site has to be isomorphic with the one in the antecedent. The fact that the gapped verb has to be isomorphic with the one in the antecedent implies that in (3b) the gap is syntactically active.

(4) *Brazilian Portuguese: stripping with a non-defective verb*

A: Você vota *(n)a Maria então?
you vote on-the Mary then
'Do you vote for Mary then?'

B: Não, *(n)a Ana ~~[IP eu voto *t*]~~.
no on-the Ana ~~[IP I vote *t*]~~
'No, I vote for Ana.'

(5) *Brazilian Portuguese: stripping with a defective verb*

A: Você demole a casa então?
you demolish the house then
'Do you demolish the house then?'

B: Não, o prédio ~~[IP eu *V *t*]~~
no the building ~~[IP I demolish *t*]~~
'No, the building.'

(6) *Brazilian Portuguese: comparative deletion with non-defective and defective verbs*

a. Você votou mais vezes *(n)a Maria do que eu ~~votei~~ *(n)a Ana.
you voted more times on-the Mary of-the that I ~~voted~~ on-the Ana
'You voted for Mary more times than I voted for Ana.'

b. Você demole mais casas com um trator do que eu ~~*V casas~~ com
you demolish more houses with a tractor of-the that I ~~demolish houses~~ with
uma picareta.
a pickaxe.
'You demolish more houses with a tractor than me with a pickaxe.'

(7) *Brazilian Portuguese: fragment answers with a non-defective verb*

A: Em quem você votou?
in who you voted
'Who did you vote for?'

B: *(N)o João ~~[IP eu votei *t*]~~
on-the John ~~[IP I voted *t*]~~
'I voted for John.'

(8) *Brazilian Portuguese: fragment answers with a defective verb*

A: Quem demole a casa?
who demolishes the house
'Who demolishes the house?"

B: Eu [$_{IP}$ *t* ~~*V a casa]~~.

I ~~[$_{IP}$ *t* demolish the house]~~

'I demolish the house.'

5.1.2 Russian defective verbs

To illustrate the cases of salvation by deletion in Russian, I will use two defective verbs: *pret-i-t'* ($\sqrt{\text{REPULSE}}$-TV-INF) 'to repulse' and *oščut-i-t'* ($\sqrt{\text{SENSE}}$-TV-INF) 'to sense'.[7] Typically, Russian defective verbs belong to the second conjugation (*-i-* theme vowel) in the non-past paradigm with a verb stem ending in a dental consonant. The gaps fall in the first person singular non-past cell of the paradigm, where other verbs of the same conjugation ending in a dental consonant have alternations.[8] This is shown in the following table by comparing their non-past paradigm with that of two non-defective verbs *sokrat-i-t'* ($\sqrt{\text{SHORTEN}}$-TV-INF) 'to shorten' and *met-i-t'* ($\sqrt{\text{AIM}}$-TV-INF) 'to aim', in which the verbal forms are divided into two slots, with the verb stem followed by the theme vowel plus inflectional morphology (šč = /ʃ/ and č = /tʃ/):

	NON-PAST			
1sg/ 1pl	*V/ pret-im	*V/ oščut-im	sokrašč-u/ sokrat-im	meč-u/ met-im
2sg/ 2pl	pret-iš/ pret-ite	oščut-iš/ oščut-ite	sokrat-iš/ sokrat-it	met-iš/ met-it
3sg/ 3pl	pret-it/ pret-iat	oščut-it/ oščut-iat	sokrat-it/ sokrat-iat	met-it/ met-iat
infinitive	pret-it' to repulse	oščut-it' 'to sense'	sokrat-it' 'to shorten'	met-it' 'to aim'

Table 5.2: Russian second conjugation: comparison between defective and non-defective verbs

[7] The reason for choosing these two particular verbs is twofold. First, the competition analysis I will develop is easily stated with verbs whose stems end in *-t*. Second, these verbs assign different cases to their complements, which makes it possible to demonstrate that the gaps are syntactically active in the ellipsis site. The facts I report here for these two verbs hold for all Russian defective verbs I tested.

[8] See Halle 1973; Sims 2006; Baerman 2008; Pertsova 2016 and Gorman and Yang 2019 for discussion.

In the 1.SG, *sokrat-it'* 'to shorten' undergoes the *t* /t/ → *šč* /ʃ/ mutation (*sokrašč-u*), inherited from Old Church Slavonic; whereas *met-it'* 'to aim' undergoes the *t* /t/ → *č* /tʃ/ mutation (*meč-u*), inherited from Old Russian. I take these alternations to be morphophonological and the defectiveness of verbs like *pret-i-t'* 'to repulse' and *oščut-i-t'* 'to sense' to arise through competition between the forms reflecting these two mutations (see Gorman and Yang, 2019, for a similar proposal), which I implement in terms of *lethal competition* between vocabulary entries (Nevins 2014), where essentially, the Subset Principle (Halle, 1997) for Vocabulary Insertion (or what Fodor 1972 calls 'posttransformational lexical insertion') cannot resolve a tie between equally specified entries.

(9) a. $\sqrt{\text{REPULSE}} \leftrightarrow$ /preʃ/ / _ *v*+1SG.NPST c. $\sqrt{\text{REPULSE}} \leftrightarrow$ /pret/

b. $\sqrt{\text{REPULSE}} \leftrightarrow$ /pretʃ/ / _ *v*+1SG.NPST

(10) a. $\sqrt{\text{SENSE}} \leftrightarrow$ /oʃuʃ/ / _ *v*+1SG.NPST c. $\sqrt{\text{SENSE}} \leftrightarrow$ /oʃut/

b. $\sqrt{\text{SENSE}} \leftrightarrow$ /oʃutʃ/ / _ *v*+1SG.NPST

The presence of two competitors equally fit for 1.SG non-past leads to ineffability, since the system cannot decide between the two possible forms in the context of first person singular non-past.

In both cases above, defectiveness is the lack of a proper allomorph: in Brazilian Portuguese due to the lack of an elsewhere item, and in Russian due to lethal competition between two forms.[9] With this background, let's look at what happens in ellipsis sites.

[9]Defective verbs (as well as defective nouns) may be found in a range of languages beyond these two; see Baerman, Corbett, and Brown (2010) for a thorough overview. I predict that all morphophonologically-based cases of defectivity will show parallel patterns of salvation by deletion under the relevant ellipsis types.

In Russian the evidence that the lexical gap is syntactically active is more direct, since the verbs under discussion assign different cases to their complements. We can thus see case-connectivity in the very examples where the lexical gaps are inside the ellipsis site. Consider now the following pair:

(11) *Russian: gapping with defective verbs*

a. Na veršine étoj gory ty oščutiš radost', a ja ~~*V~~ strakh.
on top this mountain you sense happiness.ACC but I ~~sense~~ fear.ACC
'At the top of this mountain, you will sense happiness, and I fear.'

b. Ty pretiš mne, a ja ~~*V~~ tebe.
you repulse me.DAT and I ~~repulse~~ you.DAT
'You repulse me, and I you.'

In both examples, the gapped verb corresponds to a gap in the paradigm. From the verbs I am using, *oščut-it'* 'to sense' assigns accusative and *pret-it'* 'to repulse' assigns dative. The case of the verb complement in the gapped clause is dependent on the verb inside the ellipsis site, again implying that the verb inside the ellipsis site is isomorphic with the one in the antecedent.

The very same pattern arises for other types of ellipsis:[10]

(12) *Russian: stripping a defective verb I*

[10]See Depiante 2000, Merchant 2004, Nakao 2009, among others on stripping and fragment answers, which I take to involve movement of the remnant to a focus projection followed by IP deletion; and Chomsky 1977, Kennedy 2002, Lechner 2018, among others on comparative deletion.

A: Ty oščutiš radost' na veršine étoj gory.

you sense happiness.ACC on top this mountain

'You will feel happiness at the top of this mountain.'

B: Net, strakh ~~[$_{IP}$ ja *V *t* na veršine étoj gory]~~.

no fear.ACC ~~[$_{IP}$ I sense *t* on top this mountain]~~

'No, fear.'

(13) *Russian: stripping a defective verb II*

A: Ty pretiš vsem svoim neprijatel'am.

you repulse all self adversary-PL.DAT

'You repulse all your adversaries.'

B: Net, tol'ko Ivanu ~~[$_{IP}$ ja *V *t*]~~.

no only Ivan.DAT ~~[$_{IP}$ I repulse *t*]~~

'No, only Ivan.'

(14) *Russian: comparative deletion with defective verbs*

a. Na veršin-e étoj gory ty oščutiš radost' bystree, čem ja ~~*V~~

on top this mountain you sense happiness.ACC faster than I ~~sense~~ strakh.

fear.ACC

'At the top of this mountain, you will sense happiness faster than I fear.'

b. Ty pret-i-š mne bolše, čem ja ~~*V~~ tebe.

you repulse me.DAT more than I ~~repulse~~ you.DAT

'You repulse me more than I you.'

(15) *Russian: fragment answers with a defective verb I*

A: Ty znaeš, čto ty oščutiš na veršine étoj gory?
you know what you sense on top this mountain
'Do you know what you will feel at the top of that mountain?'

B: Strakh ~~[$_{IP}$ ja *V *t*]~~.
fear.ACC ~~[$_{IP}$ I sense *t*]~~
'Fear.'

(16) *Russian: fragment answers with a defective verb II*

A: Sredi tvoikh neprijatelej, komu ty pretiš bolše vsego?
among your adversary who you repulse most of.all
'Among your adversaries, who do you repulse the most?'

B: Ivanu ~~[$_{IP}$ ja *V bolše vsego *t*]~~.
Ivan.DAT ~~[$_{IP}$ I repulse most of.all *t*]~~
'Ivan.'

The patterns found in the examples above all suggest that these lexical gaps are syntactically active. This implies that in these cases syntax builds the relevant structures that correspond to lexical gaps. If the source of defectiveness here is lack of a proper allomorph, and ellipsis bleeds lexical insertion (say, by the instruction of non-pronunciation of a constituent by an E-feature on the head introducing the constituent to be elided; Merchant 1999, Aelbrecht 2009, Kornfeld and Saab 2004, Sailor 2019 see also Wasow 1972, p.98 for a precursor of this idea), the prediction is that defective verbs like these can

appear inside ellipsis sites.[11]

5.2 Non-salvation by deletion

5.2.1 English defective modals

I will now consider two cases of non-salvation by deletion in English in the realm of defective verbs. First, certain English modals can also be said to be defective as they lack non-finite forms (**must can*, **will can*, **is can(ing)*, **have can(ed)*, **does can*, ...):[12]

(17) a. *John must can swim. (Intended: According to the evidence, John is able to swim.)

b. *John will can swim. (Intended: John will be able to swim.)

c. *John doesn't can swim. (Intended: John isn't able to swim.)

In principle, one possibility is to say that we are again facing morphophonogical defectiveness just like what we saw for Brazilian Portuguese and Russian, and that English *can* can only be realized in the presence of a [+finite] I^0:

(18) can ↔ /kæn /__ $I^0_{[+fin]}$ (no elsewhere item)

[11] A similar pattern of salvation by deletion may be found with defective *nouns* in Russian like *mečtá* 'dream', as observed by a reviewer of the paper version of this chapter. Post-stressing nouns like this lack a genitive plural form, but are saved by ellipsis:

(i) U nego byli mečt-ý, a u menja ne bylo ~~*N~~.
at him.GEN were dreams-PL.NOM and at me.GEN not were ~~dream.PL.GEN~~
'He had dreams, but I hadn't.'

[12] This type of defectiveness is not found, for instance, with *have to* (e.g. *I will have to go*, *I don't have to go*). *have to* however also has other restrictions (e.g. **I'm having to go*.

This analysis however seems to make the wrong prediction, since ellipsis doesn't make the examples any better:[13]

(19) a. *Mary can swim, and John must ~~can swim~~ too.

b. *Mary can swim, and John will ~~can swim~~ too.

c. *Mary can swim, but John doesn't ~~can swim~~.

Consider now the following examples with both *must* and *have to* receiving a deontic interpretation:

(20) a. I must leave.

b. I have to leave.

Even though (20a) and (20b) can be synonymous, *must*, like *can*, lacks non-finite forms, but *have to* does not:

(21) a. *I don't must leave.

b. I don't have to leave.

Such a pattern is carried over to ellipsis sites:

(22) a. *John must leave, but I don't ~~must leave~~.

b. John has to leave, but I don't ~~have to leave~~.

(23) a. *John must leave, and I do ~~must leave~~ too.

[13] As a reviewer of the paper version of this chapter points out, the examples in (19) do not logically exclude the lexical insertion rule in (18). Example (19), however, does exclude (18) as the *sole* source of defectiveness of *can*, given our discussion of salvation by deletion in BP and Russian.

b. John has to leave, and I do ~~have to leave~~ too.

This comparison raises skepticism on the possibility of deriving the defectiveness of modal *can* and *must* from a *semantic* property.

Lasnik 2019 also provide similar contrasts with the modals *can* and *may*:

(24) a. *Mary may access the records and Bill should may access the records by tomorrow.

b. *Mary may access the records and Bill should ~~may access the records~~ by tomorrow.

(25) a. Mary has permission to access the records and Bill should have permission to access the records by tomorrow.

b. Mary has permission to access the records and Bill should ~~have permission to access the records~~ by tomorrow.

(26) a. *Mary can write Fortran programs, and John will can write Fortran programs by next semester.

b. *Mary can write Fortran programs, and John will can ~~write Fortran programs by~~ next semester.

(27) a. Mary has the ability to write Fortran programs, and John will have the ability to write Fortran programs by next semester.

b. Mary has the ability to write Fortran programs, and John will ~~have the ability to write Fortran programs~~ by next semester.

The unacceptability of the examples in (19), (22a), (23a), (24b) and (26b) can be

predicted if the defectiveness that has been traditionally associated with English modals like *can*, *may* and *must* is not the lack of a proper allomorph, but actually the lack of an appropriate formative that provides the input to syntax in the English grammar. In the lexicon, English modals like *can* always come with a [+fin] feature that must be checked against a finite I^0, which limits its distribution morphosyntactically, without making reference to exponence.[14]

Though I have assumed, for concreteness, that modals like *can*, *must* and *may* project a VP and then move to I^0, it should be said that it is orthogonal to the main point here whether these modals project a ModP/VP and move to I^0 or project an IP directly. The crucial observation is that English grammar, more specifically its lexicon, restricts the distribution

[14]Omer Preminger (pers. comm) has raised the possibility of maintaining the idea that the defectiveness of English modals like *can* and *must* is morphophonological, as I argued for the Russian and Brazilian Portuguese defective verbs I considered before, and not morphosyntactic as I argue here. He conjectures that examples like the following (ia) are parallel to the ones we are considering with modals as in (ib):

(i) a. *John is working, but I don't ~~be working~~.
b. *John must leave, but I don't ~~must leave~~.

Since English *be* indeed has a bare form, he reasons, the problem with (ia) cannot be related to the lack of a proper morpheme, which I agree. He proposes that the parallel between (ia) and (ib) is not accidental and that the problem with both examples is that the highest auxiliary verb in English must raise to I^0. The unacceptability of examples like (ib), according to Preminger, has nothing to do with lack of a proper morpheme as I propose. Examples like (ia) however are ruled out independently. (ia) is an instance of the well known Warner's effect (Lasnik 1995, see section 2.1.6). Specifically, VP ellipsis with mismatching forms of *be* in the antecedent and the ellipsis site is not possible even when *be* is not required to raise:

(ii) a. John **was** being obnoxious, and Mary will **be** obnoxious too.
b. *John **was** being obnoxious, and Mary will ~~**be** obnoxious~~ too.

The examples in (i) are thus not as parallel as one might think. More importantly, lack of salvation by deletion obtains even in contexts where modals cannot possibly raise to I^0 because I^0 is already occupied by *to* (Howard Lasnik, pers. comm):

(iii) a. *Mary can swim and John wants to can swim.
b. *Mary can swim and John wants to ~~can swim~~.

of these modals in such a way that they cannot appear in positions that require non-finite forms and that ellipsis cannot do anything about it. As we have just seen, it is unlikely that the distribution of these modals can be deduced from semantic properties. Furthermore, there are several languages (Brazililan Portuguese and Mandarin, for instance), and even dialects of English, where modals do not have these distributional restrictions.

Defectiveness in this case is a deeper property of English grammar. Specifically, its lexicon of formatives does not include a version of modals like *can* without this [+fin] specification. As such, the ellipsis pattern above is straightforwardly understood, as the syntax is not able to build the relevant structure to begin with.

5.2.2 English *beware*

The second case of non-salvation by deletion in English occurs with the verb *beware* (Lakoff 1970b, p.28, Fodor 1972), which appears only in imperative sentences, embedded under modals and command verbs (e.g. *tell, ask,* ...), as seen in the examples below:

(28) a. Beware of barking dogs!

b. You should/must beware of barking dogs.

c. I told them to beware of barking dogs.

(29) a. *John bewares of barking dogs. (intended: John watches out for barking dogs.)

b. *John bewared of barking dogs. (Intended: John watched out for barking dogs.)

c. *John didn't beware of barking dogs. (Intended: John didn't watch out for barking dogs.)

d. *I won't beware of barking dogs. (Intended: I will not watch out for barking dogs.)

We must rule out first the possibility of *beware* being parsed as *be aware* (pace Fodor 1972), which could in principle account for some of its restrictions. The restriction on the tensed *beware* (**bewares*, **bewared*) would follow because *aware* is an adjective and thus cannot host tense morphology. Similarly, the restriction on **John didn't beware of barking dogs* would reflect the restriction on **John didn't be aware of barking dogs*, which doesn't seem to be related to defectiveness.

This analysis, however, faces setbacks. It is not clear that *beware* is diachronically derived from *be aware*; the Oxford English Dictionary reports some ancient uses of *beware* (≈1300) where *be* is a verb prefix/particle *by* rather than a copula, and also some inflected uses (*bewares*, *bewared*, ...) after the 17th century, which were eventually discarded. Second, the fact that, for some speakers, *beware* can take a DP complement directly is difficult to reconcile with a *be aware* parsing, as adjectives cannot case-mark their complements. Consider the following example of *beware* with a direct DP complement:[15]

(30) a. %You should beware barking dogs!

b. %Beware barking dogs!

(31) Since I am a dog, beware my phanges. (Shakespeare, *Merchant of Venice* III. iii. 7 [16th-century])

(32) 'Beware the Jabberwock, my son!
The jaws that bite, the claws that catch!

[15] I thank Norbert Hornstein for making this point.

Beware the Jubjub bird, and shun

The frumious Bandersnatch!'

(Lewis Carroll, *Jabberwocky* [1871])

Another evidence against the idea that *beware* is simply parsed as *be aware* comes from the following contrast (Max Guimarães, pers. comm.):

(33) a. *They should beware of barking dogs, but they aren't.

b. They should be aware of barking dogs, but they aren't.

If *beware* and *be aware* were not distinct, it is unclear why the contrast above should obtain.

Notice now, that *beware* can in principle appear inside ellipsis sites:

(34) a. They told me to beware of the dog, but I refused to ~~beware of the dog~~

b. They didn't tell me to beware of barking dogs, but I should ~~beware of barking dogs~~.

Crucially, the constraints on the distribution of *beware* inside ellipsis sites instantiate a case of *non-salvation* by deletion:[16]

(35) *Beware* is **not** saved under ellipsis

a. *John should beware of barking dogs, but he doesn't ~~beware of barking dogs~~.

b. *I told them to beware of barking dogs, but they don't ~~beware of barking dogs~~.

It looks like we are indeed facing another case where ellipsis cannot save a defective verb,

[16]I thank Howard Lasnik for the observation the *beware* is not repaired by deletion in examples like these.

similar to what we witnessed above with English modals.

I take *beware* to have a [+irrealis] feature in the lexicon, which can be licensed by a $C_{[+imperative]}$, some modal verbs and verbs of command. The defectiveness of *beware* again comes from the lack of a formative that provides the input to syntax that would be compatible with a [-irrealis] environment. Non-salvation by deletion again implies that the English formative list cannot provide the relevant pieces for syntax to build the structure inside the ellipsis site, and that ellipsis, as an instance of non-pronunciation, can only save those morphemes that are syntactically licensed but morphophonologically problematic.

5.2.3 Russian *pluralia tantum*

A reviewer of Mendes and Nevins submitted has pointed out the relevance of a phenomenon from Russian that follows a pattern similar to *beware*. In particular, Russian *pluralia tantum* nominals lack a form for the paucal genitive of quantity used with numerals from *one and a half* ('poltora') to *four* ('četyre') and this restriction is carried over to ellipsis sites:

(36) *U nas byli odni poxoron-y, a ne tri
by we.GEN were one.PL funeral-PL.NOM and not three
'We had one funeral, not three (funerals).'

(37) *U nas byli ne odni poxoron-y, a tri
by we.GEN were not one.PL funeral-PL.NOM and three
'We didn't have one funeral, but three (funerals).'

In order to circumvent such restrictions, speakers use a collective numeral that combines

with a genitive plural form of the noun.

(38) U nas byli odni poxoron-y, a ne troe ~~poxoron~~
by we.GEN were one.PL funeral-PL.NOM and not three.COLL funeral.PL.GEN
'We had one funeral, not three (funerals).'

(39) U nas byli ne odni poxoron-y, a troe ~~poxoron~~
by we.GEN were not one.PL funeral-PL.NOM and three.COLL funeral.PL.GEN
'We didn't have one funeral, but three (funerals).'

Notice also that paucal genitive of quantity in general can be elided with a nominative antecedent:

(40) U nas byla odna vstreč-a a ne tri (vstreči).
by we.GEN were one.SG meeting-SG.NOM and not three meeting-SG.GEN
'We had one meeting, not three (meetings).'

This shows that the identity condition on ellipsis can cope with such mismatches, and thus the problem with (36) and (37) must be attributed to the defectiveness of the *pluralia tantum* nouns, rather than to the genitive of quantity environments per se.

Though I will not offer a complete analysis here, it is clear that such defectiveness lies outside of the domain of morphophonology. I suggest that *pluralia tantum* nominals in Russian come from the lexicon specified as [−singular, +augmented, −additive] (Harbour, 2014) and this featural specification clashes with that of paucal numerals. Defectiveness in this case comes from the fact that the Russian lexicon lacks a proper formative that would fit the structure in (36) and (37), similar to the cases with *beware* above, which cannot be

inserted in finite realis environments.[17]

5.3 Conclusion

We have seen two types of defectiveness: morphophonological failures, whereby the set of vocabulary entries in a language lacks an appropriate allomorph, and syntactic failures, whereby the lexicon lacks an appropriate formative to insert in a given morphosyntactic environment. Ellipsis operations, modeled as an instruction to forego Vocabulary Insertion, can track this distinction, thereby constituting an efficient probe into lexical representations.

[17]There is in fact a third possibility, namely, that the impossibility of paucal numerals with these pluralia tantum nouns arises from LF defectiveness. More specifically, the lack of an Encyclopedic entry for the relevant alloseme, along the lines Harley's 2014 proposal for explaining the oddity of *#a cahoot*. Under such an analysis, which I must leave open for future research, the ill-formedness of (36) and (37) would be more akin to the following:

(i) a. I don't care for these high jinks, #not even one.
b. I don't care for John's high jinks, #especially the last.

Chapter 6: Final remarks

Cold Mountain Road's a joke,
no cart track, no horse trail.
Creeks like veins, but still it's hard to mark
the twists. Fields and fields of crags for crops, it's
hard to say how many.
Tears of dew upon a thousand kinds of grasses; the
wind sings best in one kind of pine.
And now I've lost my way again:
Body asking shadow, "Which way from here?"

Hanshan (1546–1623). Poem II. In *Cold Mountain Poems. 2009* translated by J.P. Seaton

Under the assumption that ellipsis sites require unpronounced syntactic structure to some degree isomorphic with their antecedent, as discussed in chapter 2 and justified in several place here, salvation and non-salvation by deletion can be used to investigate several aspects of universal grammar (computational resources) and individual grammar (lexical resources). On one hand, some locality constraints on movement should be seen as PF-phenomena, e.g. islands, constraints on extraction in Nupe perfect clauses. On the other, some types of locality constraints and defectiveness must be seen as computational or

lexical limitations: superiority effects, head movement constraint, defectiveness of English modals.

The following paragraphs summarize the discussion.

In chapter 2, I revisited previous literature on salvation by deletion and the nature of ellipsis more generally. I showed new evidence that ellipsis requires unpronounced structure and that such structure has to be isomorphic to its antecedent. I also presented novel data that support the idea that salvation by deletion is a real phenomenon. From Merchant 1999, Boeckx and Lasnik 2006 and Nakao 2009, I took the idea that if ellipsis is PF-deletion, instances of non-salvation by deletion, as we see in superiority effects, have to be taken either as derivational constraints or as an LF-representation constraint.

In chapter 3, I analyzed verb-echo answer in Brazilian Portuguese. It was shown that they require a word order that is not generally available in the language. I interpreted the word order restriction as a PF-restriction, which can thus be repaired under ellipsis. I implemented this analysis in the framework of cyclic linearization (Fox and Pesetsky 2005a, among others). Specifically, transitive *v*Ps are linearized once completed, which, in general, restricts word order to $\{S \prec V \prec O\}$. In verb-echo answers, the finite verb moves to C creating a linearization conflict that requires the verb to follow and precede the subject (e.g. $\{V \prec S \prec V \prec O\}$. IP-ellipsis eliminates the subject and the object and also the linearization statements referring to them. As a result, ellipsis repairs the otherwise illicit PF-representation.

In chapter 4, I applied the salvation by deletion test in three novel environments: (i) extraction restrictions in perfect clauses in Nupe; (ii) intervention effects in A-movement; and (iii) head movement locality. The fact that the extraction restrictions in Nupe can be repaired by deletion allowed us to directly compare two approaches to phases: cyclic

linearization (Fox and Pesetsky 2005a) and Phase Impenetrability Condition (Chomsky 2001). It was shown that while cyclic linearization can easily account for the data, Phase Impenetrability Condition requires further stipulations. The lack of repair with intervention effects in A-movement suggested that we are dealing with a derivational constraint and the lack of repair with head movement locality suggested we are dealing either with a derivational constraint or an LF-representational constraint.

Finally, in chapter 5, I used salvation and non-salvation by deletion as way to probe into lexical resources. The defective verbs in Brazilian Portuguese and Russian were analyzed as the lack of a proper allomorph, while defectiveness associated with English modals and English *beware* were analyzed as lack of a proper morpheme.

I finish this dissertation by pointing out two other domains where I believe salvation by deletion might be productive. The first is the Person Case Constraint (Perlmutter 1968; Bonet 1991; Nevins 2007; Preminger 2014, among many others). The second, is the general restriction of subextraction in Basque (Uriagereka 1999a). These will be explored in future work.

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