Generals Paper: Bipartite syntax of *either* in *either*…*or*… sentences*
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1. Introduction

Focus-sensitive operators are a class of expressions that evaluate focus in a sentence. While there is disagreement as to how exactly these operators interacts with focus semantically, this paper will focus on their syntax and argue that they belong to a homogenous group of expressions in that they share the same syntactic properties.

To begin, consider the following syntactic structure proposed by Cable (2007) for Q(uestion)-particle in questions, a focus-sensitive operator:

\[ [\text{CP} \ Q_i \ [t_i \ \text{Focus} \ldots]] \]

According to this proposal, Q-particle is base-generated in a position c-commanding the focused \textit{wh}-phrase before moving to the CP domain in response to a probe on the interrogative C\text{\textsuperscript{0}}. While languages vary in the details of this structure such as whether or not Q projects, Cable argues that the general structure illustrated in (1) is universal to all questions across languages.

In this paper I extend this generalization to all focus-sensitive operators, and argue that they all possess such a \textit{bipartite syntax}, in which there are two instances of the operator in a sentence. The base position of the operator must be local enough to and c-command the focused element. Then in response to a higher probe, the operator moves to its specifier position.

Languages and operators vary in the details of this bipartite structure, such as how local the operator must be to focus, whether or not the operator projects, and the location of the higher probe, but what is common is that there exist two instances of an operator in a sentence.

I will show that two other focus-sensitive operators in English, *either* and *only* have this bipartite syntactic structure as well. The claim is that this is not an accident, but rather a property shared by all focus-sensitive operators.

Much of the paper will be dedicated to the relatively understudied *either* in *either* … *or*… sentences before I compare its structure with *only* and Q-particle. Assuming that a nontrivial disjunction phrase (*orP*) always presents at least two focused elements that contrast with each other (Focus\textsubscript{1} and Focus\textsubscript{2} below), I will propose that *either* originates anywhere inside *orP* as long as it c-commands the leftmost focused element, Focus\textsubscript{1} in (2). Then *either* moves to the left periphery of *orP* (Spec, *orP*) to agree with the disjunction head. This movement can be either overt or covert. In other words, either the high or low copy of *either* may be pronounced. I will call these two copies high *either* and low *either* respectively.

\[ [\text{orP} \ \text{Either}_1 [\text{or} \ [A \ldots t_i \ \text{Focus}_1 \ldots] \text{ or } [B \ldots \text{Focus}_2 \ldots]]] \]

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At the same time, repeated materials in the second disjunct B may be deleted under identity with their counterpart in the first disjunct A, giving rise to the illusion that high either may be higher than the left periphery of orP:

(3) [orP Either₁ [or [A … t₁ X Focus₁ …] or [B X Focus₂ …]]]

This ellipsis mechanism is not common to all focus-sensitive operators (not Q, for example), and perhaps a unique property of coordinated structures because they may repeat information in the second coordinate.

Application of this analysis involves the following 3-step template:

(4) a. Identify the first focused element. Either must c-command it.
    b. Identify orP.
    c. Determine if either is a high copy or a low copy. If either is in Spec, orP, it is a high copy. Otherwise, it is a low copy.

Before I present evidence supporting this analysis, I will show how it works by applying it to the following simple example:

(5) John will either eat rice or he will eat beans.

As the first step, suppose that the focused elements in (5) (underlined in (6a)) are rice and beans, and I will explain in detail how to identify them in section 3. Either does c-command the first focused element rice.

Next, identify the sentence as a disjunction of two clauses, as (6b) illustrates. Finally, the surface position of either is clearly lower than Spec, orP, so it is a low copy. The high copy, which is not pronounced in this case, will be Spec, orP according to the proposal (6c).

(6) a. John will either eat rice or he will eat beans. Step 1
    b. [orP [A John will either eat rice] or [B he will eat beans]]. Step 2
    c. [orP Either₁ [or [A John will either; eat rice] or [B he will eat beans]]]. Step 3

Because either the high or low copy of either may be pronounced, pronouncing the high copy would generate the following sentence, which is acceptable too:

(7) Either John will eat rice or he will eat beans.

While application of the analysis to the above simple example is straightforward, the second step may be complicated by the fact that repeated materials in the second disjunct sometimes get deleted, so the actual orP is not what it appears to be.

To illustrate this, I will now apply the analysis to the full paradigm of either…or… sentences. First, either can appear adjacent to the apparent orP (in the parentheses are the apparent orP, and they may differ from the actual orP):
Either adjacent to orP

a. John will eat either [orP rice or beans]. (DP-level disjunction)
b. John will either [orP bake a cake or boil water]. (VP-level disjunction)
c. Either [orP John will cook rice or Mary will boil water]. (TP-level disjunction)

It can also appear higher than the apparent orP. I follow den Dikken (2006) in calling this the either-too-high problem:

(9) Either too high

a. John will either [orP rice or beans]. (DP-level disjunction)
b. Either John will eat [orP rice or beans]. (DP-level disjunction)
c. Either John will [orP bake a cake or boil water]. (VP-level disjunction)

Likewise, the either-too-low problem refers to the fact that either can appear embedded in the apparent orP:

(10) Either too low

a. [orP John will either eat rice or he will eat beans].\(^1\) (TP-level disjunction)
b. [orP John either will eat rice or he will eat beans]. (TP-level disjunction)
c. [orP John will either bake a cake or he will boil water]. (TP-level disjunction)

The case with either immediately preceding orP in (8) can be accounted for using the 3-step template. Take (8a) as an example. First, the focused elements are again rice and beans, underlined in (11a), and either does c-command the first focus rice. Next, assuming what appears as orP is the actual orP (11b), then the high copy of either is the specifier of this orP (11c). The low copy is embedded in orP but c-commands rice.

(11) a. John will eat either rice or beans.
   b. John will eat either [orP \[A \text{rice}\] or \[B \text{beans}\]].
   c. John will eat [orP either, [orP \[A \text{either, rice}\] or \[B \text{beans}\]]].

\(^1\) For reasons not yet clear to me, these either-too-low sentences become awkward when either immediately precedes the object:
(i) ??[John was eating either rice] or [he was eating beans].
(ii) ?John was [eating either rice] or [eating beans].

Judgments from native speakers suggest that (i) and (ii) and only degraded, but not completely ungrammatical.

The degradation can’t be due to redundancy in the second disjunct, as (10a,b) repeat the whole clause too in the second disjunct.

Also, embedding the contrastive element deeper in the object improves the sentence:

(iii) John was [reading either a book about CHOMSKY] or [reading a book about CHOPSTICKS].

But it can’t be that low either has to be separated from focus by some overt materials either, as low either in (10c) is adjacent to focus, but the sentence is acceptable. Therefore, I assume the reason why (i) and (ii) are awkward is independent of the core problem investigated in this paper, but leave it for future research.
The *either*-too-low problem can be resolved using the 3-step template as well. (10a) is identical to the simple example (5) analyzed previously. And the analysis of (10b) is almost identical to (10a), with the only difference being the base position of *either*:

(12) a. John either will eat rice or he will eat beans.
   b. \[orP [A John either will eat rice] or [B he will eat beans]].
   c. \[orP Either [or' [A John either will eat rice] or [B he will eat beans]]\].

Here *either* is base generated before *will* instead of the main verb, but that position still c-commands the first focused element, and satisfies the first step. Recall the requirement on *either* that it may originate anywhere in *orP* as long as it c-commands the leftmost focus. (10a) and (10b) are two such possible positions.

(9) can be analyzed with the template as well, if we allow ellipsis to happen at the same time. Take (9a) as an example. First, the focused elements are again *rice* and *beans*, and *either* c-commands the first focus. To decide what *orP* really is, it can’t be what appears to be the disjunction of two DPs. According to the proposal provided in (2), *either* can only move to as high as Spec, *orP* (argument for this claim will be presented in section 2). If the disjoined constituents are really two DPs, *either* will be higher than it can be. But if we allow ellipsis to take place, then the coordinated elements may actually be two VPs, with the second main verb being deleted under identity with the first one (13b). Then this *either* would be adjacent to and specifier of this *orP* (13c), so it is a high *either*.

(13) a. John will either eat rice or beans.
   b. John will either \[orP [A eat rice] or [B eat beans]].
   c. John will \[orP either [or' [A eat rice] or [B eat beans]]\].

Having just illustrated how this proposal applies to different examples, I will argue for it with evidence in the next few sections. My proposal about *either* involves three components: a) there is a copy of *either* in Spec, *orP*; b) there is another copy of *either* embedded in *orP*; and c) the high copy is created by movement of the low copy.

The next three sections will provide arguments for each one of these claims. After presenting and justifying the analysis of *either*, I will compare it with the syntactic properties of *only* and Q-particle. To preview, I will point out the striking similarities among them, and speculate that all focus-sensitive operators share this bipartite syntactic structure: there are always two copies of them in a sentence, and each copy satisfies a specific role. The last section concludes and raises future questions, one of which concerns why there is this need for two separate copies of the same element, assuming that its complexity makes it more difficult to learn than having a single copy. I suggest the answer to be that a single copy cannot satisfy all the different roles at the same time.
2. *Either* is in Spec, or P

This section will focus on the copy of *either* in Spec, or P. In previous literature, Schwarz’s (1999) reduction analysis makes one of the strongest arguments for *either* in Spec, or P. Not only that, Spec, or P is the highest position that *either* can be in. When *either* appears higher than that (the *either*-too-high sentences), gapping has taken place in the second disjunct.

2.1 *Either* can’t move further from Spec, or P

I review Schwarz’s (1999) analysis in this section, and (14a-c) would be his analysis for the *either*-too-high sentences in (9a-c):

(14) a. John will either eat rice or eat beans.
   b. Either John will eat rice or he will eat beans.
   c. Either John will bake a cake or he will boil water.

An argument for this reduction analysis comes from the observation that the *either*-too-high sentences are degraded when *either* precedes the TP and a particle is dangling at the end. Compare (15a) and (15b):

(15) a. ??Either this pissed Bill or Sue off.
   b. Either this pissed off Bill or Sue.

On the other hand, the same sentence is not as degraded once *either* is preverbal. (16a) is as good as (16b):

(16) a. This either pissed Bill or Sue off.
   b. This either pissed off Bill or Sue.

Schwarz argues that the dangling particle *off* in (16a) cannot be a result of unbalanced gapping because gapping cannot leave dangling remnants in one conjunct:

(17) a. Some talked *(with you) about politics and others talked with me about music.
   b. John dropped the coffee and Mary (*clumsily) dropped the tea.

Having excluded unbalanced gapping as the source generating (16a), then the particle *off* has to be Right Node Raised (RNRed) out of each disjunct in (16a). This operation is not available to (15a), hence its degradation. The observation can then be phrased as the following: RNRing the particle is good when *either* is pre-verbal, but degraded when *either* is pre-TP. (18) and (19) correspond to (15a) and (16a) respectively with the added illustration of balanced gapping and RNR movement:

(18) ??Either [TP this pissed Bill t] or [TP this pissed Sue t] off_i,j.

(19) This either [VP pissed Bill t] or [VP pissed Sue t] off_i,j.
Schwarz (1999:359) argues that the degradation of (15a) is due to the marginality of RNRing a bare particle up to a position above TP. In comparison, RNRing the particle just out of VP is much better. In support of this claim, the non-elliptical version is just as degraded when *either* precedes TP:

(15a') ??Either this pissed Bill or it pissed Sue off.

(16a') This either pissed Bill or it pissed Sue off.

There have been alternative accounts of *either* in the literature. One of the most prominent is Larson’s (1985). While he agrees with Schwarz that *either* originates as a sister of *orP*, there is no ellipsis in the second disjunct. Instead, the *either*-too-high phenomenon results from its upward movement. I call Larson’s analysis *movement-only approach* to contrast with Schwarz’s *ellipsis-only approach*.

Under the movement-only approach, the contrast just seen between pre-TP *either* and pre-VP *either* could be phrased as the following: when a particle is RNRed, somehow *either* cannot move to as high as the TP domain, but it can still move to VP:

(20) a. ??Either this pissed t₁ Bill or Sue off.
   b. This either pissed t₁ Bill or Sue off.

However, this analysis cannot account for the following example, which is much improved compared to (15a), but only differs from it minimally by replacing *either* with its *wh*-counterpart *whether*:

(21) I wonder whether this pissed Bill or Sue off.

It is generally assumed in the literature (e.g. Larson 1985, Han and Romero 2004, den Dikken 2006) that *whether* is *either* with an additional *wh*-feature. Then *whether* and *either* should have almost the identical derivational history in syntax, i.e. being base-generated in Spec, *orP*, except that *whether* has an extra movement step to the CP domain. Thus, the contrast between pre-TP *either* and pre-VP *either* cannot be due to a ban on *either* moving too high because in (21) *whether* moves even higher to CP, and yet it is better than (15a).

As Han and Romero (2004) have pointed out, the acceptability of (21) can be explained only if we allow ellipsis to happen in the second disjunct. Because ellipsis obscures the actual size of *orP*, or in (21) can actually disjoin two VPs, with the repeated main verb being deleted in the second disjunct (22). This is an acceptable move under Schwarz’s analysis because RNRing the particle *off* across a VP is fine. Then *whether* would originate from the sister position of that VP-disjoining *orP*, and move to Spec, CP:

(22) I wonder whether this tᵢ [ₐ,pissed Bill tⱼ] or [ₐ,pissed Sue t₃] off,ₖ.

Crucially, this option is not possible for *either* in (15a) because unlike *whether*, *either* is immobile. Once *either* appears in Spec, *orP*, it must remain in that position and cannot move any
further. So when *either* appears pre-TP, what is really disjoined are two TPs, and RNRing the particle past TP is bad.

To summarize this subsection, the contrast between pre-TP *either* and *whether* has provided us with two insights: a) Spec, orP is the upper bound of *either*’s position, i.e. it can’t move further up from that position; and b) ellipsis can take place in the second disjunct.

However, the ellipsis-only approach makes an additional assumption that has not yet been justified so far: Spec, orP is *either*’s origination position. Given the first insight from this subsection that *either* can’t move further up from Spec, orP, this means that the ellipsis-only approach believes Spec, orP to be the one and only position for *either*.

2.2 Problem 1: low *either*

Sections 2.2 and 2.3 will show that this additional assumption is not correct by pointing out two problems with it. First, it cannot account for other instances of *either* that appear low and embedded in the disjunction. These are the so-called *either*-too-low problem, and the same examples seen earlier are repeated below:

(23) a. John will either eat rice or he will eat beans.
   b. John either will eat rice or he will eat beans.

2.3 Problem 2: scope

It also fails to account for the following facts observed by Larson (1985): (24) has all the three readings below it. But among these readings (25) only has reading 2, and (26) only reading 3.

(24) Sherlock pretended to be looking for *either* a burglar or a thief. (all three readings)
Reading 1: Sherlock pretended to look for someone who is either a burglar or a thief.
Reading 2: Sherlock pretended to do one of two things: *either* look for a burglar or look for a thief.
Reading 3: Either one of two things happened: Sherlock pretended to look for a burglar, or he pretended to look for a thief.

(25) Sherlock pretended to *either* be looking for a burglar or a thief. (reading 2 only)
(26) Sherlock *either* pretended to be looking for a burglar or a thief. (reading 3 only)

According to the ellipsis-only approach, there is gapping in the second disjunct in (25) and (26). Once gapping is undone, (25) and (26) correctly give rise to the readings they correspond to, which are (27) and (28).

(27) Sherlock pretended to *either* be looking for a burglar or be looking for a thief.
(28) Sherlock *either* pretended to be looking for a burglar or pretended to be looking for a thief.

But this approach can’t explain why (24) has readings 2 and 3. Recall that the assumption is *either* originates in Spec, orP. Because *either* is already adjacent to the disjunction *a burglar or a
thief in (24), nothing can be elided. If we posit ellipsis in the second disjunct, *either* will be lower
than Spec, orP, contradicting the assumption:

(29) Sherlock pretended to be looking for *either* a burglar or *be looking for* a thief.

3. Proposal

The aforementioned two problems both challenge the unnecessary assumption that *either* only
appears in one position, Spec, orP. Therefore, from the data I posit two different positions for
*either*: embedded in orP (10), or Spec, orP (8)-(9). I call the embedded position *low either*, and
the position in Spec, orP *high either*. This is the only part where I depart from Schwarz’s
proposal, and I follow the rest of his analysis that the highest position *either* can be in is Spec,
orP, and ellipsis may take place in the second disjunct, creating the illusion that *either* seems
higher than it actually is.

3.1 Low either and high either have different properties

I will now argue for positing two different positions for *either* by showing that these two
positions not only exist independently of each other, but they also have very different syntactic
properties.

First, let us examine the properties of low *either* closely. As Hendriks (2001, 2003) has
observed, *either*’s occurrence is restricted. Disjunction introduces at least a pair of elements that
contrast with each other (underlined in the following sentence). And crucially, low *either* must c-
command the first contrasted element:

(30) a. Sherlock either found the burglar or he got fired.
    b. *Sherlock found either the burglar or he got fired.
    c. *Sherlock found the either burglar or he got fired.
    d. *Sherlock found the burglar either or he got fired.
    e. *Sherlock found the burglar or either he got fired.

If no contrastively focused is present in the c-command domain of *either*, the sentence is
unacceptable. Dutch distinguishes strong, stressable pronouns like *mij* (‘me’) from weak,
unstressable pronouns like *me* (also meaning ‘me’). Only strong pronouns can be in focus, and if
the c-command domain of Dutch *of* (‘either’) contains a pronoun as its only element, this
pronoun must be strong:

    Jane saw either me or him
    ‘Jane saw either me (strong) or him.’
    
    b. *Jane zag of me of hem. (Hendriks 2003; pg. 14)
Other well-known focus particles like *only* behave like this too, which suggests that *either* is a focus-sensitive operator in having to c-command focus.

If c-commanding focus is the only requirement on the syntactic position of *either*, and following Hendriks’ (2003; pg. 39-46) and den Dikken’s (2006) arguments that it is a phrasal element, then the lowest position for low *either* would be an adjunct to the focused phrase:

(32)

Because in this structure *either* is a modifier and forms a constituent with the focused phrase, following Erlewine’s (2016) terminology I call it a *constituent adverbial position*, and this *either constituent either*. Note that if high *either* always has to be in Spec, orP, it can’t be this low. This is then a distinguishing property between the two: low *either* can be a constituent adverb, whereas high *either* can’t. I will use this as a diagnostic for high vs. low *either* later.

When there are overt materials between low *either* and the left edge of orP, such as *John* in the following example, we can clearly tell it is a low *either*:

(33) John either ate rice or he ate beans.

But when *either* appears at the left edge of orP like in the following sentence, it is ambiguous between a low *either* and a high one:

(34) John ate *either* rice or beans.

(35) Low *either*

(36) High *either*
Using the aforementioned distinguishing property between high *either* and low *either*, I will probe whether *either* at the left edge of *orP* is high or low. And my results will show that even at this ambiguous position, low *either* and high *either* display very different properties, so there must be two *eithers*.

The next four subsections present four situations, in each of which an independent restriction prohibits high *either*, so what remains must be low *either*.

### 3.1.1 Intervention between the verb and the direct object

First, English does not allow adverbs to overtly intervene between the verb and the object (perhaps due to Case Theory):\(^2\)

(37) a. John carefully ate beans.
   b. *John ate carefully beans.
   c. John ate beans carefully.

Constituent adverbs that modify the object can intervene, however. Contrast the constituent adverb in (38a) with the sentential adverb that attaches to the clausal spine (again named after Erlewine’s (2016) terminology) in (38b):

(38) a. *John likes often [working on focus]. (sentential adverb)
   b. John likes [often working on focus]. (constituent adverb)

The same restriction applies to *either*. The following sentence has an unambiguously high *either*, and it cannot intervene between the verb and the direct object because it is a sentential adverb:

(39) *John ate either rice with chopsticks or with a fork.\(^3\)

However, in the example (34) raised before, replicated below, *either* can intervene between the verb and the object:

(40) John ate either rice or beans.

This must be an instance of low *either* because low *either* can be a constituent adverb but high *either* cannot, and only constituent adverbs may intervene between the verb and the object. So the correct structure for (40) is the following:

\[^2\] See Richards (2016) for an alternative analysis for this requirement.

\[^3\] Note that the syntactic structure for (39) is the following:

(i) *John ate [orP either [or rice with chopsticks or with a fork]].

The DP *rice* is embedded in the *orP*, and yet *either* still manages to intervene between it and the verb. So the *orP* boundary does not seem to be visible in the adjacency requirement between the verb and the object. In fact, the verb can assign accusative case across the *orP* boundary as well, suggesting that the boundary is indeed invisible:

(ii) John saw [orP him or her].
(41) John ate \([_{orP \ [A \ either \ rice]} \ or \ [B \ beans]]\).

### 3.1.2 Either’s intervention between the verb and the subject of small and ECM clauses

Now consider another requirement that a sentential adverb may not intervene between the verb and the subject of a small or ECM-infinitival clause (perhaps also due to Case Theory). In contrast, a constituent adverb can intervene:

(42) a. *John considers often \([\text{working on focus}]\) to be appealing. (sentential adverb)
b. John considers \([\text{often working on focus}]\) to be appealing. (constituent adverb)

(43) a. *John put often \([\text{working on focus}]\) before everything else. (sentential adverb)
b. John put \([\text{often working on focus}]\) before everything else. (constituent adverb)

(44) a. *John saw often \([\text{working on focus}]\) bother his wife. (sentential adverb)
b. John saw \([\text{often working on focus}]\) bother his wife. (constituent adverb)

The following examples all have unambiguous high either. It is forbidden in these positions because it can’t be a constituent adverb:

(45) a. *John considers either the president a fool or a genius.
b. *John put either the book on the shelf or on the table.
c. *John gave either the book to Mary or to Sue.
d. *I saw either John kiss Mary or Sue. \[\text{Den Dikken (2006)}\]

In the following examples, however, either appears at the edge of orP but can intervene between the verb and the embedded subject, so they must be instances of constituent either.

(46) a. John considers either the president a fool or his wife one.
b. John put either the book on the shelf or the record on it.
c. John gave either a book to Mary or a record to her.
d. I saw either John kiss Mary or Bill kiss her. \[\text{Den Dikken (2006)}\]

Either here must modify the embedded subject:

(47) a. John considers \([_{orP \ [A \ [DP \ either \ the \ president] \ a \ fool]} \ or \ [B \ his \ wife \ one]\)].
b. John put \([_{orP \ [A \ [DP \ either \ the \ book] \ on \ the \ shelf]} \ or \ [B \ the \ record \ on \ it]}\).
c. John gave \([_{orP \ [A \ [DP \ either \ a \ book] \ to \ Mary]} \ or \ [B \ a \ record \ to \ her]}\).
d. I saw \([_{orP \ [A \ [DP \ either \ John] \ kiss \ Mary]} \ or \ [B \ Bill \ kiss \ her]}\).

What is worth mentioning is that when both the embedded subject and the embedded object are focused, either only has to c-command the first contrastive focus, i.e. the embedded subject.

(48) a. John considers either the president a fool or his wife a genius.
b. John put either the book on the shelf or the record on the table.
c. John gave either a book to Mary or a record to Sue.
d. I saw either John kiss Mary or Bill kiss Sue.  

These sentences are okay because *either* is a constituent adverb to the embedded subject DP, and it does not c-command the embedded object:

(49) a. John considers [orP [A [DP either the president] a fool] or [B his wife a genius]].
   b. John put [orP [A [DP either the book] on the shelf] or [B the record on the table]].
   c. John gave [orP [A [DP either a book] to Mary] or [B a record to Sue]].
   d. I saw [orP [A [DP either John] kiss Mary] or [B Bill kiss Sue]].

3.1.3 *Either* as an inner island

*Either* itself seems to be an inner island: *wh*-extraction of nominals across it is possible (50a), whereas *wh*-movement of non-nominals is not allowed (50b,c). While den Dikken used (50b) as an example for *either*’s intervention in *whether*-movement, this restriction is actually more general and applies to all non-nominal *wh*-elements:

(50) a. I wonder to whom either Mary gave a book or a record.
   b. *I wonder whether either Mary went swimming or dancing or not.
   c. *I wonder how quickly either Mary ran a mile or a kilometer.

Similar to what is seen in the previous subsections, if contrastive focus falls on the embedded subject instead, the sentences become perfect.

(51) a. I wonder whether either Mary went swimming or Sue did.
   b. I wonder how quickly either Mary ran a mile or Sue did.

*Either* here is a constituent adverb modifying the subject:

(52) a. I wonder whether [orP [A [DP either Mary] went swimming] or [B Sue did]].
   b. I wonder how quickly [orP [A [DP either Mary] ran a mile] or [B Sue did]].

Even if the object is also focused, *either* only needs to c-command the focused subject:

(53) a. I wonder whether [orP [A [DP either Mary went swimming] or [B Sue went dancing]].
   b. I wonder how quickly [orP [A [DP either Mary ran a mile] or [B Sue ran a kilometer]].

3.1.4 *Either*’s intervention between matrix C and the subject

High *either*, like other sentential adverbs, may not intervene between matrix C and the subject. The underlined phrases bear focus:

(54) a. *To whom did probably Mary give a book?

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4 I phrase the restriction in a way that it only has to do with subject-auxiliary inversion in matrix questions, as the counterpart in embedded questions is fine (50a). See Kayne (1984:Chapter 10) and Richards (2016) for explanations for this intervention effect.
b. To whom did Mary probably give a book?

(55) a. *To whom did either Mary give a book or a record?
   b. To whom did Mary give either a book or a record?

But if the subject is focused, *either* is allowed to appear between C and the subject:

(56) a. To whom did either Mary give a book or Sue (give) a record?
   b. To whom did either Mary give a book or Sue (give a book)?

These are constituent *eithers* that attach locally to the subject:

(57) a. To whom did \([orP [A [DP either Mary] give a book] or [B Sue (give a record)]]]\)
   b. To whom did \([orP [A [DP either Mary] give a book] or [B Sue (give a book)]]]\)

This section has shown with four independent situations that *either* can surface as a constituent adverb modifying the first contrastively focused element. Crucially, high *either* cannot appear in this position. This calls for an analysis involving two different *eithers*.

So far, we have mostly discussed the lowest position for low *either*, as a constituent adverb to the focused phrase. Can it occur higher, away from the focused phrase? It seems so, as (25) and (26) show, reproduced below. *Either* in these sentences is a low copy, as it is embedded in *orP*. And this low *either* is pre-verbal rather than immediately preceding the focused DP.

(58) Sherlock pretended to *either* be looking for a burglar or he pretended to be looking for a thief.
(59) Sherlock *either* pretended to be looking for a burglar or he pretended to be looking for a thief.

Low *either* may originate in its surface position in these two sentences, or it may be base-generated as a constituent adverb and move to the surface position:

(60) Sherlock pretended to *either* be looking for a burglar or he pretended to be looking for a thief.
(61) Sherlock *either* pretended to be looking for a burglar or he pretended to be looking for a thief.

The movement analysis cannot be right because low *either* can appear outside a complex NP or an adjunct island that contains the focused phrase:

(62) Sherlock either made \([island the claim that he found a burglar], or he made the claim that he found a thief\).
(63) Sherlock is either happy \([island because he found a burglar], or he is happy because he found a thief\).
If low *either* is always base-generated adjacent to the focused phrase, then it will have to violate the island constraint in order to move from immediately before *a burglar* to its surface position in (62) and (63). Given this, I argue that low *either* can originate anywhere in orP as long as it c-commands the first focused phrase.

### 4 High *either* is created by movement

Having examined low *either*’s syntactic properties and established that it has different properties from high *either*, let us now evaluate the relation between high *either* and low *either*. We have seen from the verb particle data in section 2 that high *either* is in Spec, orP. But how does it get to that position? Is it base-merged there or moved there?

#### 4.1 Island effects

The following data suggest that it is created by movement. High *either* cannot be separated from the apparent edge of disjunction by negation or a complex NP boundary, as (64) and (65) show respectively:5

(64) High *either* can’t be above negation:
- ??Either John didn’t try to eat rice or beans.
- ??John either didn’t try to eat rice or beans.
- John didn’t try to either eat rice or beans.

(65) High *either* can’t be above a complex NP boundary:
- *Either John revised his decision to cook rice or beans.
- *John either revised his decision to cook rice or beans.
- *John revised either his decision to cook rice or beans.
- John revised his decision to either cook rice or beans.

Assuming *either* is not nominal, if it moves, negation and complex NP would be islands to its movement, as Larson (1985) noted. Then (64) and (65) suggest that high *either* may have moved from a position embedded in the island to its surface position.

Interestingly, low *either* has just the opposite distribution: it may not occur below negation and a complex NP boundary:

(66) Low *either* can’t be below negation:
- John either wasn’t eating rice or he wasn’t eating beans.
- *John wasn’t eating either rice or he wasn’t eating beans.

---

5 It has been noted in the literature (e.g. Larson 1985 and den Dikken 2006) that H-*either* can’t be separated from the disjunction by a clause boundary (*either* occurs in one of the bracketed positions):

(i) <???Either> he <???either> said <%either> that <either> he <either> would <either> eat <either> rice or beans.

However, an acceptability judgment survey conducted by Hofmeister (2010) indicates no significant difference between the judgment of the high positions of H-*either* above C and the lower positions below C. These positions are considered to be equally good, which suggests that the restriction on the clause-boundedness of H-*either* may not be correct. Therefore, I do not list it as a restriction here.
(67) Low *either* can’t be below a complex NP boundary:

a. John was either reading a book about Chomsky or he was reading a book about chopsticks.
b. John was reading either a book about Chomsky or he was reading a book about chopsticks.
c. *John was reading a book either about Chomsky or he was reading a book about chopsticks.
d. *John was reading a book about either Chomsky or he was reading a book about chopsticks.

Following the same logic for (64) and (65), (66) and (67) suggest that low *either* may not move from its surface position to a place outside the island.

The restriction on low *either* (66)-(67) can then be understood together with the restriction on high *either* (64)-(65) if we assume that high *either* is created by low *either*’s movement. In other words, high *either* and low *either* are copies of the same element, whose movement chain may not cross an island. This is why high *either* may not occur above islands, and low *either* may not occur below them:

(68) * … either\(_H\) … [island … either\(_L\)]

If high and low *either* are copies of the same element, from the data so far it seems that either copy may be pronounced. In other words, when low *either* surfaces, it undergoes covert movement. I discuss it using the terminology of the copy-based analysis of covert movement here, but the proposal is in fact compatible with other formulations of covert movement.

4.2 Alternative analyses

Note that the island restrictions on high *either* are compatible with alternative analyses raised previously in the literature. Den Dikken (2006) has proposed a base-generation account for *either*, according to which *either* originates in its surface position. And there are restrictions on where it can originate: It cannot be merged above negation or a complex NP boundary when the focused phrase is below them, so (64) and (65) are bad.

This approach, however, cannot explain the distribution of low *either*. As we have seen in (66) and (67), low *either* can perfectly surface above negation and complex NP boundary. It just can’t appear below them. To adopt this analysis, we would have to postulate two different sets of restrictions for high *either* and low *either*, namely that high *either* cannot be merged above negation and complex NP boundary, and low *either* cannot be merged below them. Not only is this analysis a restatement of facts, but it is also more complicated than the proposal that high *either* is created by movement.

Another analysis for (64) and (65) was made by Schwarz (1999), which was already reviewed in section 2. This proposal attributes the unacceptability of (64) and (65) to a restriction on gapping, i.e. negation and complex NP boundary cannot be gapped. However, this approach fails to explain low *either*’s distribution because there is simply nothing to elide in (66) and (67), so an independent explanation would be required.
Larson (1985) has suggested an alternative way of analyzing (66) and (67). Rather than having low *either* move covertly to Spec, *orP*, he suggests that high *either* lowers to low *either’s* position. However, it is not possible to move into low *either’s* position. As we have seen in section 3.1, low *either* can be as local to the focused phrase as its modifier. This position is too embedded to move into.

Larson also suggested another completely different analysis, i.e. the apparently low *either* is due to an asymmetric disjunction of a VP and a TP. And *either* is always merged as a sister of the asymmetric *orP*:

(69) Sherlock pretended to either [orP [VP be looking for a burglar] or [TP he pretended to be looking for a thief]].

Then the apparent island facts for low *either* would result from a requirement that after *either* is merged with an asymmetric *orP*, somehow negation or a complex NP boundary can’t be above this *either*. The most serious problem of this proposal is that *either* isn’t always a sister of *orP*. Recall that we have seen low *either* form a constituent with the focused phrase in section 3, so it can be lower than sister of *orP*.

Another alternative I can think of is what I call the non-ATB (non-across-the-board) approach: *Either* is always in Spec, *orP*, and when it appears apparently embedded in *orP*, the subject, and possibly other materials such as the auxiliary have non-ATB moved out of the first disjunct. And somehow negation and complex NP boundary cannot non-ATB move.

This approach falls short in many ways. Most importantly, *either* isn’t always in Spec, *orP*, again as we have seen in section 3 that it can be a constituent adverb to the focused phrase. Also, while subject’s non-ATB movement has been previously proposed in the literature, non-ATB moving the auxiliary and the main verb is far less common.

Having critically reviewed and rejected all the alternatives I can think of, I will follow the most promising idea that high *either* is created by low *either’s* movement. Then the question is why it moves to Spec, *orP*. I suggest that this movement is triggered by agreement with the disjunction head. In response to the probing disjunction head, *either* moves to Spec, *orP* and agrees with it.

There is morphological evidence for this agreement relation. In the negated version, *neither…nor…* construction, spreading of the negative feature to both disjunction coordinators *neither* and *nor* suggests that they do share features. If *or* itself is the disjunction head, as I have been assuming in this paper, then it will probe upwards to find *either* in the first disjunct:

(70)

![Diagram of disjuncts and negation features.]
But if the disjunction head is a null element above *either*, it will probe downwards to agree with *either* and move *either* to its specifier. Then there may be a second agreement relation between this disjunction head and *or*, through which the head transmits the same features it shares with *either* to *or*, and the negative feature gets transmitted and spread this way.

(71)

Both analyses are compatible with my story here, as long as *either* moves to Spec, *or*P for agreement.

To summarize, after establishing in sections 2 and 3 that *either* have two different copies, in the last two subsections 4.1 and 4.2 I have argued that after *either* originates inside *or*P, it agrees with the disjunction head and is internally merged as the sister of *or*P. I have completed the arguments for all the components of my proposal for *either*. Next, I will return to a remaining problem of the ellipsis-only account, and show that my proposal resolves it successfully.

### 4.3 Review of scope facts

This proposal successfully accounts for the scope facts in section 2.1 that the ellipsis-only approach cannot account for. I repeat the examples and their corresponding readings below:

(72) Sherlock pretended to be looking for *either* a burglar or a thief. (all three readings)
(73) Sherlock pretended to *either* be looking for a burglar or a thief. (reading 2 only)
(74) Sherlock *either* pretended to be looking for a burglar or a thief. (reading 3 only)

Reading 1: Sherlock pretended to look for someone who is either a burglar or a thief.
Reading 2: Sherlock pretended to do one of two things: either look for a burglar or look for a thief.
Reading 3: Either one of two things happened: Sherlock pretended to look for a burglar, or he pretended to look for a thief.

Recall that when *either* is unambiguously a high copy, as in (73) and (74), we only get one reading, i.e. the scope of disjunction matches high *either*’s surface position. But when *either* appears adjacent to *or*P in (72), we get three scope readings.

Under my proposal, this is because *either* in (72) can be parsed as a low copy embedded in *or*P. If *either* in (72) is an instance of low *either*, just by hearing it we do not know where it covertly moves to, i.e. where the high copy is. If the high copy is between *pretended* and *looking for* (75), it will give rise to reading 2. If it is above *pretended* (76), it will give rise to reading 3.
(75) Sherlock pretended to either, [orP be looking for either, a burglar or be looking for a thief].
(76) Sherlock either, [orP pretended to be looking for either, a burglar or pretended to be looking for a thief].

Then the generalization is what really determines the scope of disjunction is high either’s position, not low either’s.

4.4 One more problem

So far nothing prevents either in (73) from being a low copy, however. It could be embedded in orP followed by gapping in the second disjunct. This would incorrectly lead to reading 3:

(77) Sherlock pretended to either be looking for a burglar or he pretended to be looking for a thief.

I argue that (77) is not a licit structure for gapping. I adopt Coppock (2001)’s ellipsis analysis, though other approaches to gapping such as Johnson’s (2009) ATB movement account are compatible too.

First, take a legal gapping sentence (75) as an example. According to Coppock, in gapping, the overt phrase (a thief) survives gapping by moving out of the ellipsis site E before E is elided. In order to license ellipsis, there has to be an antecedent phrase A that is parallel to E. So the corresponding DP (a burgler) moves out of the antecedent phrase A as well, and A and E are parallel:

(78) Sherlock pretended to either [A be looking for ti] [a burglar], or [E be looking for tj] [a thief].

Consider the illegal sentence (77). After a burglar and a thief move out, E and A are not parallel because A contains either and E doesn’t (following a syntactic notion of parallelism)⁶, so ellipsis is not licensed.

(79) [A Sherlock pretended to either be looking for ti] [a burglar], or [E he pretended to be looking for tj] [a thief].

This does not mean that all low either sentences are incompatible with gapping though. Consider the low either sentence in (72) that does allow gapping and give rise to reading 3. This low either can “piggy-back” on the DP’s movement and escape the antecedent A, rendering A and E parallel:

(80) [A Sherlock pretended to be looking for ti] [either a burglar], or [E he pretended to be looking for tj] [a thief].

⁶ See Messick and Thoms (2016) for arguments for a syntactic restriction of parallelism instead of a semantic one.
We have seen low *either* appear adjacent to a DP and “piggy-back” on its movement, which leads to parallel A and E. Satisfaction of parallelism licenses ellipsis, so that we can get readings 2 and 3. In fact, low *either* can also “piggy-back” on the movement of its adjacent VP. In the following sentence, *either* is adjacent to the VP *be looking for a burglar*, and it has both readings 2 and 3.

(81) Sherlock pretended to *either* be looking for a burglar or be looking for a thief.

Reading 3 corresponds to the following gapped sentence:

(82) Sherlock pretended to *either* be looking for a burglar or *he pretended to* be looking for a thief.

It is a legal gapping structure because the phrase that survives ellipsis is the VP *be looking for a thief*. Therefore, to maintain parallelism, the corresponding VP has to move out of the antecedent phrase as well. *Either* is adjacent to and tags along this VP that moves out:

(83) \[ \text{[A Sherlock pretended to t₁] [either be looking for a burglar], or [E he pretended to t₁] [be looking for a thief].} \]

Because the elided phrase E doesn’t contain *either*, parallelism requires A to exclude *either* too. So the generalization is that low *either*’s position in the antecedent phrase sets the upper bound of how large E can be: E cannot be so large that its corresponding A contains *either*.

The only exception to this generalization is when low *either* is adjacent to the phrase that moves out of A and tags along with it. Then the size of E is not restricted, and we can get multiple scope readings. So the only situation where we can get multiple scope readings for the disjunction is the following:

(84) … either X or Y, where Y is the constituent that survives ellipsis, and X is Y’s corresponding constituent.

5. Other focus-sensitive operators

In this section I will compare *either* with two other focus-sensitive operators *only* and Q, and will show that the observations made so far about the syntax of *either* apply to *only* and Q as well, which suggests that they can potentially be generalized to all focus-sensitive operators.

To review, in previous sections we have made the following observations about high and low *eithers*: (i) their syntactic positions are sensitive to the placement of focus: the low copy must c-command focus (the fact that the high copy is created by movement and c-commands the low copy means that the high copy also c-commands focus). (ii) the two copies have different properties: low *either* can be a constituent adverb, but high *either* can’t; when low *either* (not high *either*) surfaces, the sentence may have multiple scope readings. (iii) they are island-sensitive: high *either* can’t be separated from low *either* by an island.
Based on (i)-(iii), I argued that there are two distinct copies of *either*: Low *either* has to originate in a position c-commanding the first focus, and high *either* is created by movement in an agreement relation with a probe. I call this the *bipartite syntax* of *either* following Hirsch’s terminology (2017).

If *only* and Q also have properties (i)-(iii), this suggests that they have the same bipartite structure: there are two copies of them. The lower copy must c-command focus, and it moves up for syntactic and semantic reasons.

5.1 *Only*

The distribution of *only* is fairly free in English, but it must always c-command the associated focus (underlined), an indication that it possesses property (i):

(85) a. John only ate *rice* with chopsticks.
    b. John ate only *rice* with chopsticks.
    c. *John ate *rice* only with chopsticks.
    d. *John ate *rice* with only chopsticks.

Rooth (1985) has argued that there are two different *onlys* in English. I call them low and high *onlys* respectively. Low *only* is usually adjacent to focus, and the other *onlys* would be high. For instance, when focus falls on a DP, the *only* that immediately precedes it is low (86), and the *only* on the clausal spine is high (87):

(86) John ate only *rice*.
(87) John only ate *rice*.

One of Rooth’s arguments for two different *onlys* parallels the observed property (ii) about *either*. It has to do with the fact that low *only* can be a constituent adverb modifying the focused DP, but high *only* can’t. First, low *only* can intervene between the verb and the direct object (88), but high *only* can’t (89):

(88) John ate only *rice* with chopsticks.
(89) *John ate only rice with chopsticks.*

In parallel to our observations about *either*, low *only* can intervene between the verb and the embedded ECM subject (90) and the embedded small clause subject (91), but high *only* can’t (92)-(93):

(90) John considers only the president a fool.
(91) John put only the book on the shelf.
(92) *John considers only the president a fool.*
(93) *John put only the book on the shelf.*

High *only* is an island to non-nominal movement (95), whereas low *only* forms a constituent with the focused phrase, so it does not intervene in the non-nominal movement (94):
(94) I wonder how quickly Mary ran only a mile.
(95) *I wonder how quickly Mary only ran a mile.

This suggests that low only forms a constituent with the adjacent focused element. Following is the structure for (88), for instance:

(96) John ate [_{DP} only rice] with chopsticks.

Also, as Taglicht (1984) and Rooth (1985) have observed, low only introduces scope ambiguities that high only does not have, again in striking similarity to property (ii) of either. (97) has a low only, and both readings 1 and 2. But out of these two readings (98) only has reading 1, and (99) only has reading 2.

(97) They were advised to learn only Spanish. (Rooth 1985; p. 90)
Reading 1: They were advised not to learn any other language.
Reading 2: They were not advised to learn any other language.

(98) They were advised to only learn Spanish.
(99) They were only advised to learn Spanish.

Hirsch (2017) takes this as evidence that there coexist two onlys in a sentence, with high only being the locus for semantic interpretation, and low only being semantically inert. In English the two onlys are homophonous, and only one of them can be pronounced.

Under this view, (97) has two readings because it has two parses with high only in different positions. The high only that is semantically interpreted but not pronounced is marked in bold below. (100) corresponds to reading 1, and (101) corresponds to reading 2:

(100) They were advised to only learn only Spanish.
(101) They were only advised to learn only Spanish.

This contrast in scope readings between low only (97) and high only (98)-(99) can be a diagnostic for which copy of only we hear. If only has only one fixed scope at its surface position, it is high only. If it has multiple scope readings, it is low only. I will use this diagnostic later to tell which copy it is.

It is worth noting that low only loses its scope ambiguity once embedded in an island. The following sentence embeds low only in a complex NP island, and it has reading 1, but not reading 2, where only takes scope outside the island.

(102) They were advised to learn the language that only John speaks.
Reading 1: They were advised to learn the language that no other person speaks.
Reading 2: They were not advised to learn the language that any other person speaks.
Taking seriously Hirsch’s (2017) view that high only is responsible for semantic interpretation, the missing reading 2 would correspond to the following structure, with the unpronounced high only in bold:

(103) *They were only advised to learn the language that only John speaks.

The illegality of (103) can be understood if we consider low only to move to high only’s position, recalling property (iii) of either. Movement of low only across the complex NP island in (103) is prohibited.

The following example makes the same point but with an adjunct island. (104) has reading 1, but not reading 2 presumably because only’s movement is subject to the adjunct island as well:

(104) They were advised to learn Spanish when only John told them to.
Reading 1: They were advised to learn Spanish when no other person told them to.
Reading 2: They were not advised to Spanish when any other person told them to.

So far we have seen only with the identical syntactic properties of either: (i) low only must c-command focus. (ii) low only is a constituent adverb, whereas high only isn’t; appearance of low only, not high only, is associated with multiple scope readings; and (iii) low only can’t move past an island to generate high only.

Does only differ from either in any way? One difference is how local the low copy must be to focus. As we have seen in section 2, low either can occur anywhere in orP as long as it c-commands the focus. This means that when the object DP is focused, for example, low either can attach to the VP containing it. I repeat (25) and (26) below:

(105) Sherlock pretended to either be looking for a burglar or he pretended to be looking for a thief.
(106) Sherlock either pretended to be looking for a burglar or he pretended to be looking for a thief.

Low only has to be more local to focus, however. When the object DP is focused, low only has to immediately precede it (97). Pre-VP only would be a high one, as we have seen in (98)-(99).

As I will discuss in the next section, the attachment site of the low focus-sensitive operator depends on the language and the operator, so it may not be surprising that either and only differ in this respect.

5.2 Q(uestion)-particle

Turning now to Q-particle in questions, Hagstrom (1998) and Kishimoto (2005) have argued that in wh-in-situ languages such as Sinhala and Japanese, a Q-particle is attached to the phrase containing the wh-element. Then being probed by the interrogative C, Q moves to Spec, CP:
The structure in (107) represents the following claim: Q originates in a position local to the \( wh \)-phrase (the concept of ‘locality’ will be defined in section 5.3.2) and c-commands it. Then a higher interrogative C head probes down for the Q feature on the particle, agrees with Q and moves it to its specifier position. In particular, Q is inserted as a constituent adjunct to the \( wh \)-word, and the position it subsequently moves to is a scope position.

This movement may be overt (as in Japanese) or covert (as in Sinhala). In Japanese, Q-particle \( ka \) must move to the CP domain, and appear clause-finally (108), whereas in Sinhala, the Q-particle \( da \) moves covertly, and appears in-situ next to the focused \( wh \)-phrase (88).

(108) Japanese \( ka \) must appear clause-finally
John-ga nani-o kaimasita ka?
John-nom what-acc bought.polite Q
‘What did John buy?’

(Cable 2007; p. 168)

(109) Sinhala \( da \) cannot appear clause-finally
Chitra monawa da gate
Chitra what Q buy
‘What did Chitra buy?’

(Kishimoto 2005; p.3, 4)

Following the common assumption that \( wh \)-words are focused (e.g. Beck 2006), this proposal looks strikingly similar to the bipartite structure proposed for \( either \): Q is base-generated in a position local to and c-commanding the focus, and then it moves up to agree with a higher probe.

Evidence for their analysis of Q is very similar to the evidence we have seen for \( either \) and \( only \). For instance, in Sinhala if the focused \( wh \)-phrase is inside an island, Q-particle that c-commands it must attach outside the island, so that Q can move to Spec, CP without violating the island constraint. Since DPs and PPs constitute islands in Sinhala, the \( wh \)-phrase and Q-particle \( da \) cannot both be embedded in the island:
Therefore, Q has the aforementioned three properties observed for either: (i) Q’s base position ccommands focus; (ii) its two copies have different properties: high Q is in the scope position, whereas low Q can form a constituent with the focused element; (iii) low Q has to be outside the island in order to move up.

5.3 Cross-linguistic variation

Having seen the bipartite syntactic structure shared by the focus-sensitive operators either, only and the Q-particle, i.e. two instances of the operator coexist in a sentence, I will now create a typology of these operators. I will show that while they share the same bipartite structure, they vary in details of this structure. Specifically, they may differ in the following three aspects: a) whether the operator projects; b) how local the base position must be to the focus; and c) whether the high copy is created by external merge or internal merge. The next three subsections discuss each one of these aspects of cross-linguistic and cross-operator variation.

5.3.1 ‘Pied-piping’ of focus

Cross-linguistically, a focus-sensitive operator may or may not ‘pied-pipe’ adjacent materials when it moves up. Take questions as an example. Languages differ in whether Q moves alone, or the wh-word moves as well.

Japanese is the former kind, as Q-particle ka moves overtly, and appears clause-finally, with the wh-phrase staying in-situ. Other types of languages have the wh-phrase move overtly as well, with Tlingit and English being two examples that are discussed at length by Cable (2007).

Cable extends Hagstrom’s (1998) and Kishimoto’s (2005) proposal about Japanese to languages with overt wh-movement. He argues that the structure in these languages is identical to (107), with the only difference being that Q takes its sister as a complement rather than a modifiee. In other words, Q as a head projects its feature and label to its mother, and the node immediately dominating Q is a QP. This QP inherits the Q feature of its head. When the interrogative C head probes down, it finds the QP first, and moves the entire QP to its specifier. The wh-word contained in the QP moves along, creating the impression that the wh-word fronts. Following is the proposed structure:
The crucial difference between a language with projecting Q and one with non-projecting Q is that in the former, the entire QP fronts, whereas in the latter only Q-particle itself moves. In Tlingit both Q-particle sá and the wh-word must both front to the left periphery. Fronting of only the wh-phrase (112b) or only the Q-particle (113b) is ill-formed:

(112) a. [Goodéí sá₃] has uwajéé t₁ woogootx i shagóonich?
   where.to Q they.think he.went your parents.erg
   ‘Where do your parents think he went?’
   (Cable 2007; pg. 87-88)

   b. *Goodéí₁ has uwajéé t₁ sá woogootx i shagóonich?
   where.to they.think Q he.went your parents.erg

(113) a. [Goodéí] sá yeegoot?
   Where.to Q you.went
   ‘Where did you go?’

   b. *Sá goodéí y eegoot?
   Q where.to you.went

According to Cable, Japanese would be a language whose Q does not project, but is an adjunct to its sister. So when C probes for the Q feature, it finds the Q-particle itself and moves it.

This cross-linguistic variation with Q has in fact been observed with the other focus-sensitive operators either and only. English either, for instance, always moves on its own. It is not possible for low either’s sister to move with it, which indicates that either is not a projecting operator. (114a), for example, is ungrammatical, with (114b) illustrating either’s illegal “pied-piping” of the focused phrase rice:

(114) a. *Either rice John will eat or he will eat beans.
   b. *[Either rice], John will eat [either rice], or he will eat beans.

Hungarian only, on the other hand, is a projecting operator, as it moves along with its sister in focus movement. According to Kiss’s (2002) analysis, Hungarian csak ‘only’ forms a constituent with the focused phrase. It immediately precedes the focus associate, and undergoes focus movement together with it:
English *only* has a less apparent analysis. Although we never see the focused phrase move along with *only*, Rooth (1985) argues that the focus associate actually covertly moves to become one of high *only*’s arguments. If the focused phrase does move but somehow must be pronounced low, English *only* would pattern with Hungarian *csak* in being a projecting operator. I will argue in the following subsection 5.3.2 that this is indeed the correct analysis for English *only*. Unlike *either, only* is a projecting operator.

(116) They were [only ]i advised to learn [ Spanish].

5.3.2 Locality of the base position to focus

Besides projection, another aspect up to cross-linguistic variation is the base position of the operator. Contrast the following English question with the Tlingit one. First, recall that in both languages Q projects, creating the impression that the *wh*-phrase moves and brings other materials with it. What differs between Tlingit and English is that the former allows moving an entire island to Spec, CP, whereas the latter does not:

(117) *[[Wáa kligéiyi cP] xáat island] sá i tuwáá sigóó how it.is.big.REL fish your spirit it.is.happy

How big a fish do you want? (A fish that is how big do you want?) (Cable 2007; pg. 91)

(118) *[island A fish that is how big] do you want?

Tlingit Q is overt and appears to the right of the complex NP island, taking the whole island as complement. Although English Q is not pronounced, let us assume, following Cable that it does exist, and is the head of the moved phrase in Spec, CP:

(119) * [QP Q [island A fish that is how big]] do you want?

In both languages, when the interrogative C probes, the entire QP moves instead of just Q, so Q’s position relative to the *wh*-word does not change after movement. This allows us to observe the base position of Q relative to the *wh*-word in these languages.

In Tlingit, Q can be separated from the focused *wh*-word by an island. But in English, Q’s base position has to be closer and crucially cannot be separated from the *wh*-word by an island, otherwise we would see fronting of the entire island.

According to Cable, the difference between Tlingit Q-particle *sá* and English Q is that *sá* does not agree with the *wh*-word, whereas English Q does. And this agreement relation cannot cross a syntactic island.
Evidence for agreement between the English Q-particle and the focused \textit{wh}-word comes from the common morpho-phonological ‘feature’ shared by all \textit{wh}-phrases in English: \textit{who}, \textit{what}, \textit{where}, \textit{when}, \textit{why}. Kratzer and Shimoyama (2002) propose that the unified appearance of \textit{wh}-words represents their common uninterpretable Q feature and the need to agree with Q-particle, which bears an interpretable instance of Q.

On the other hand, if \textit{wh}-words in a language lacks the common morpho-phonological feature, they don’t agree with Q. Besides Tlingit, another example suggested by Cable is Japanese, whose corresponding \textit{wh}-words lack ‘unified appearance’: \textit{dare}, \textit{nani}, \textit{doko}, \textit{itu}, \textit{naze}.

Having seen languages differ with respect to whether or not Q’s base position can be outside an island containing focus, let us now turn to another point of variation. Recall that Tlingit Q can be separated from focus by an island. But it cannot be merged arbitrarily far away from focus. Specifically, if there is a functional head somewhere above focus, \textit{sá} cannot intervene between that functional head and the phrase selected by it. For example, when the \textit{wh}-word itself is a functional head D, Q may not intervene between D and its NP complement. And when the object DP is focused, Q cannot occur between T and VP containing the object.

(120) No Q between a D and its NP complement
\begin{enumerate}
\item Daakw keitl sá ashaa?
\begin{itemize}
\item which dog Q it.barks
\end{itemize}
\begin{itemize}
\item ‘Which dog is barking?’
\end{itemize}
\begin{itemize}
\item (Cable 2007; pg. 96)
\end{itemize}
\item *Daakw sá keitl ashaa?
\begin{itemize}
\item which Q dog it.barks
\end{itemize}
\end{enumerate}

(121) No Q between a T and its VP complement
\begin{enumerate}
\item Daa sá iyatéén?
\begin{itemize}
\item what Q you.can.see.it
\end{itemize}
\begin{itemize}
\item ‘What can you see?’
\end{itemize}
\begin{itemize}
\item (Cable 2007; pg. 81)
\end{itemize}
\item *Daa iyatéén sá?
\begin{itemize}
\item what you.can.see.it Q
\end{itemize}
\end{enumerate}

Cable calls this restriction the QP-Intervention Condition, which prohibits a QP from intervening between a functional head and a phrase selected by that functional head. Crucially, this condition only applies to the maximal projection of Q. If Q does not project and is merely an adjunct to its sister, this condition will not apply, and the non-projecting Q is free to be merged anywhere.

Because Tlingit Q is a projecting operator, it cannot intervene between a functional head and its complement due to the QP-Intervention Condition.

Interestingly, whether Q projects is independent from whether Q moves overtly or covertly. In Sinhala, a covert Q-movement language, Q cannot intervene between a functional head and its selected complement either, indicating that Sinhala Q projects:
(122) No Q between a D and its NP complement
a. Chitra mona pota da gatte?
   Chitra what book Q bought
   ‘What book did Chitra buy?’ (Kishimoto 2005; pg. 13)

b. *Chitra mona da pota gatte?
   Chitra what Q book bought

I will now observe and compare the base positions of English only and either to those of Q, and use the base position as a diagnostic of whether only and either agree with focus and whether they project.

Only seems to pattern with Tlingit Q. Only can be merged adjacent to the island containing focus. Applying Cable’s analysis, this means that only does not agree with focus. Consider the following sentence that embeds the focused DP John in an adjunct island. It gives rise to two different readings, which is an indication that what surfaces is a low only, and the unpronounced high only can be in two different positions. When high only is below advised, we get reading 1. When it is above advised, we get reading 2.

(123) They were advised to listen only when John speaks.
Reading 1: They were advised not to learn any other language.
Reading 2: They were not advised to learn any other language.

Only also cannot be base merged arbitrarily far away from focus. When the object DP is focused, for example, only has to originate immediately before the focus (124). If only appears between the functional head T and its complement VP (125) and (126), it loses the ambiguity, indicating that this is not the base position, but rather high only’s position:

(124) They were advised to learn only Spanish.  (Rooth 1985, pg. 90)
Reading 1: They were advised not to learn any other language.
Reading 2: They were not advised to learn any other language.

(125) They were advised to only learn Spanish.
(126) They were only advised to learn Spanish.

Also, only may not be merged between D and its selected NP:

(127) a. John ate only the rice.
   b. *John ate the only rice. (Intended meaning: (127a))

Taking these examples as evidence that only may not intervene between a functional head (D or T) and its complement, this suggests that only projects itself, and onlyP is subject to Cable’s Intervention Condition.

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7 Only is different from Tlingit Q in that only can intervene between a P and its complement DP:
(i) I talked to only Sue.
Then Rooth’s (1985) analysis is correct that when only moves to the scope position, the focused element moves as well. Because only projects and takes the focused element as its complement, they move up together as a unit.

Let us now apply the same test to English either. Either is similar to Tlingit Q in that it can originate outside the island containing focus. Repeating the examples from before:

(128) Sherlock either made [island the claim that he found a burglar], or he made the claim that he found a thief.
(129) Sherlock is either happy [island because he found a burglar], or he is happy because he found a thief.

Following Cable’s analysis, this indicates that either does not agree with focus because islands can intervene between them.

Also, either can be inserted anywhere in orP as long as it c-commands focus, including the position intervening between the functional head T and its VP complement, which entails that either does not project and is not subject to the Intervention Condition:

(130) Sherlock pretended to either be looking for a burglar or he pretended to be looking for a thief.
(131) Sherlock either pretended to be looking for a burglar or he pretended to be looking for a thief.

The following table summarizes the paradigm of focus-sensitive operators we have seen so far in terms of whether they agree with focus, and whether they project.

(132) | Projects | Does not project |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agrees with focus</td>
<td>English Q</td>
</tr>
<tr>
<td>Does not agree with focus</td>
<td>Tlingit Q, Sinhala Q, English only</td>
</tr>
</tbody>
</table>

Based on the small-scale typology done so far on only, either and Q-particles in a few languages, we have not yet found a focus-sensitive operator that agrees with focus and does not project, but this is a logical possibility. Such an operator would not be allowed to originate outside an island containing focus, but it could intervene between a functional head and its complement. Furthermore, it moves on its own to a high position. If Kratzer and Shimoyama (2002) are correct about morpho-phonological unity, the focus associates in this language should also bear a

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This is puzzling if we follow Cable (2007) in assuming P to be a functional head like D and T. However, this assumption is debatable, not only because many prepositions are contentful, but also because they are often derived from verbs. English prepositions surrounding and preceding are such examples. For this reason, I will not consider P to be a functional head.
common morphological feature indicating that they need to agree with the operator. This typological gap awaits being filled upon discovery of such an operator.

5.3.3 External or internal merge of the high copy

Not only do all the focus-sensitive operators discussed so far have the bipartite syntactic structure, but the high copy is created by internal merge of the low copy. This is supported by the fact that the high copy may not be separated from the low copy by an island, a common diagnostic for movement.

But it is not clear why the high copy must be internally merged instead of externally merged. I will now suggest a focus-sensitive operator whose high copy does seem to be externally merged, to fill this gap in the typology.

Vietnamese possesses two lexical items for ‘only’: chí and mỗ. Hole (2013) and Erlewine (2016) have argued that chí is a sentential ‘only’, attaching to the clausal spine, whereas mỗ is a constituent ‘only’, modifying the focused phrase locally. This claim parallels our analysis that there are two copies of only in a sentence, with the high copy being a sentential only, and the low copy being a constituent one.

In Vietnamese while one of the ‘only’s may surface at one time, both can appear together in a sentence too, and the meaning remains the same. Following Erlewine (2016), I gloss chí as only$_{sent}$, and mỗ as only$_{cons}$.

(133) a. Nam chí mua cuốn sách.
   Nam only$_{sent}$buy CL book
   ‘Nam only bought the book.’
   (Erlewine 2016; p. 7)

   b. Nam mua mỗ cuốn sách.
   Nam buy only$_{cons}$ CL book

   c. Nam chí mua mỗ cuốn sách.
   Nam only$_{sent}$buy only$_{cons}$ CL book

When both ‘only’s appear, they must occur in chí-mỗ order. The reverse order is not allowed, which would make sense if chí is the high copy, and mỗ is the low one:

(134) a. Chí Mỗ Nam mua cuốn sách.
    only$_{sent}$ only$_{cons}$ Nam buy CL book
    ‘Only Nam bought the book.’

    b. *Mỗ Chí Nam mua cuốn sách.
    only$_{cons}$ only$_{sent}$Nam buy CL book
    (Erlewine 2016; p. 8)

From the evidence above, I adopt Hole’s and Erlewine’s argument that chí is high ‘only’, and mỗ is low ‘only’. And from the fact that chí and mỗ are realized differently phonologically, they
must be distinct elements rather than copies of the same constituent. Then Vietnamese may be an example where the high copy of the focus-sensitive operator is externally merged.

To sum up, this section has shown that three different focus-sensitive operators *either*, *only* and Q share the same bipartite syntax, suggesting that such a syntactic structure is potentially universal to all focus-sensitive operators. While the bipartite syntax is common, with there being two copies of an operator in a sentence, there is variation in the details in this structure, specifically in terms of whether the focus is pied-piped, exactly where the operator can originate with respect to focus, and whether the high copy is created by external or internal merge.

6. Conclusion

I have argued for the bipartite syntactic structure for *either*, and extended it to *only* and Question particle. More broadly, I suggest that all focus-sensitive operators originate in a position local to and c-commanding focus before a higher copy is (externally or internally) merged for syntactic and semantic reasons.

A question remains of why there is a need for two copies of an operator, if a single operator can satisfy all the roles and is simpler to learn. From a functional point of view, for instance, why must there be a low *either*, if its sole function is to c-command the focus? It will eventually move to Spec, *or* P, a position that c-commands the focus anyway.

One speculation is that low *either* serves an additional function of signaling that a focus associate will come up soon, so that the listener knows to expect focus upon hearing *either*. It is also possible that low *either* has some other semantic or syntactic purpose in addition to c-commanding focus.

Another curious property of low *either* is that it is only concerned with c-commanding the first contrastive focus, but not the other ones. Recall from section 3.1 that when both the embedded subject and object are focused, low *either* can be a constituent adverb to the embedded subject only. And note that it has to c-command linearly the first focus, not a hierarchically higher one. In a disjunction phrase with one contrastive focus in each disjunct, neither focus c-commands the other because they are both embedded in the disjuncts, and yet *either* always attaches to the leftmost one.

Perhaps unsurprisingly by now, this sensitivity to the first constituent has been seen in other focus-sensitive operators across languages. For instance, only the first English *wh*-phrase moves overtly, presumably because the Q-particle attaches to it rather than the other *wh*-phrases. Likewise, the first *wh*-phrase in Buli bears the overt *ka* morpheme and moves overtly, whereas the other *wh*-phrases must remain in-situ and undergo no movement, whether overt or covert. Why natural languages give a special status to the first focused constituent is another topic worth future research.
References


