Why *if or not* but ✓*whether or not**

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1. The puzzle

This squib presents a puzzle about a contrast between *whether* and *if*, and argues that the contrast can be explained if we assume that *whether* can pied-pipe, but *if* cannot. Strikingly, once we eliminate the pied-piping parse for *whether*, it behaves like *if*.

Embedded alternative questions in English may be introduced with either *whether* or *if*, as seen in (1) and (2). One difference between them is that *whether* can be immediately followed by *or not* (3), whereas *if* cannot (4).

(1) I don't know **whether** John will arrive this weekend or not.
    ✓Yes/No (Y/N) Reading: I don't know which of the following is true: (1) John will arrive this weekend, or (2) he won't arrive this weekend.
(2) I don't know **if** John will arrive this weekend or not.   (✓Y/N)
(3) I don't know **whether** or not John will arrive this weekend.   (✓Y/N)
(4) *I don't know **if** or not John will arrive this weekend.   (*Y/N)

This squib provides an analysis of this difference between *whether* and *if*. Before doing so, I want to add to the discussion another contrast between *whether* and *if*. Both (5) and (6) have the Alt(ernative) reading indicated.[1] When the disjoined PP *on Saturday or on Sunday* immediately follows *whether*, this Alt reading remains (7).[2] But when the disjoined PP immediately follows *if*, the Alt reading is lost (8).

(5) I don't know **whether** John will arrive on Saturday or on Sunday.
    ✓Alt(ernative) Reading: I don't know which of the following is true: (1) John will arrive on Saturday, or (2) John will arrive on Sunday.
(6) I don't know **if** John will arrive on Saturday or on Sunday.   (✓Alt)
(7) I don't know **whether** on Saturday or on Sunday John will arrive.   (✓Alt)
(8) I don't know **if** on Saturday or on Sunday John will arrive.   (*Alt)

The facts in (1)-(8) can be given a unified explanation. First suppose that in (1)-(4) *or not* is a disjunction phrase (DisjP), disjoining the covert positive polarity and the negative

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[1] Examples (5) and (6) also have another reading (a Y/N reading), but that is not relevant to the current discussion. Later in section 2.3 I will briefly discuss this Y/N reading of (5) and (6).
[2] This sentence is marked for some speakers, but others accept it. None of those who accept (7) accept (8).

polarity *not* (9a). In (5)-(8), *on Saturday or on Sunday* is a DisjP coordinating two PPs (9b).[3]

(9) a. [$_{DisjP}$ (positive polarity) or not]   b. [$_{DisjP}$ [on Saturday] or [on Sunday]]

There is a direct connection between the DisjP and the relevant reading. In the Y/N reading in (1)-(4), what is in question is the choice between the two alternatives *John will arrive this weekend* and *John won't arrive this weekend*. These two alternatives differ only in their polarity value. Notice that the DisjP *or not* provides the polarity values that they differ in. Therefore, I call the Y/N reading a reading where the alternatives presented in the DisjP *or not* are *put under question*.

    Likewise, in the Alt reading in (5)-(8), what is put under question is the choice between the two alternatives *John will arrive on Saturday* and *John will arrive on Sunday*. These two alternatives differ only in their PP, which is supplied by the temporal DisjP *on Saturday or on Sunday*. Therefore, I say that in this reading, it is the alternatives presented in the DisjP *on Saturday or on Sunday* that are *put under question*.

    The puzzle can then be described as a correlation between the position of the DisjP and the relevant readings we observe. This unified puzzle is summarized as follows:

(10) Unified puzzle
    a. The alternatives presented in a DisjP can be put under question when that DisjP immediately follows *whether*.
    b. The alternatives presented in a DisjP cannot be put under question when that DisjP immediately follows *if*.

2. The solution

Let us first assume the following structure for *whether*- and *if*-questions, following Larson (1985). In a *whether*-question, *whether* originates as the sister of the DisjP (assuming it is in Spec, DisjP), and subsequently moves to Spec, CP:

(11) a. I don't know whether$_i$ John will arrive this weekend [$_{DisjP}$ t$_i$ [$_{Disj'}$ or not]].
    b. I don't know whether$_i$ John will arrive [$_{DisjP}$ t$_i$ [$_{Disj'}$ on Saturday or on Sunday]].

In an *if*-question, there is a covert counterpart of *whether* with the same derivational history, i.e. origination in Spec, DisjP and movement to Spec, CP. In addition, *if* is C^0. Let us call this covert counterpart of *whether* Op(erator):

(12) a. I don't know Op$_i$ if John will arrive this weekend [$_{DisjP}$ t$_i$ [$_{Disj'}$ or not]].
    b. I don't know Op$_i$ if John will arrive [$_{DisjP}$ t$_i$ [$_{Disj'}$ on Saturday or on Sunday]].

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[3] There has been a debate about whether or not only clausal elements can be disjoined. Here I assume non-clausal elements can be disjoined, but this is only assumed for ease of description and need not be the case. However, my analysis can still be applied even if we only allow clausal disjunction.

The reading where the alternatives presented in a DisjP are put under question arises in the following way: (1) base-generate *whether* / Op as the sister of the DisjP; and (2) move *whether* / Op to Spec, CP. If either step fails to take place, the alternatives in the DisjP cannot be put under question and hence the relevant reading will be lost.

2.1. Why DisjP cannot be put under question when immediately following *if*

In this subsection I will argue that the alternatives in the DisjP that immediately follows *if* cannot be put under question because Op fails to move to Spec, CP from the position from which it would have to move.

When the DisjP follows *if*, I assume that the DisjP occupies a derived position. Because *if* is the C^0, the DisjP has Ā-moved from its base position to somewhere below C^0. Suppose this Ā-movement is topicalization:[4]

(13)   a. I don't know Op$_i$ if [$_{DisjP}$ t$_i$ [$_{Disj'}$ or not]]$_j$ John will arrive this weekend t$_j$.
       b. I don't know Op$_i$ if [$_{DisjP}$ t$_i$ [$_{Disj'}$ on Saturday or on Sunday]]$_j$ John will arrive t$_j$.

The structures in (13a,b) are unacceptable because *wh*-movement out of a topicalized phrase is not allowed:

(14)   *[$_{CP}$ wh$_i$ C^0 [$_{TopP}$ [… t$_i$ …]$_j$ Top^0… t$_j$]]]

The following examples show that this generalization is true for English, which bans *wh*-movement out of a topicalized phrase:[5]

(15)   a. *I wonder whom$_j$ [to t$_j$]$_i$ you talked t$_i$.
       b. *I wonder [what day]$_j$ John thinks that [on t$_j$]$_i$ you left.
       c. *I wonder [whose book]$_j$ Mary claims that [about t$_j$]$_i$ you talked t$_i$.

It has been argued that this restriction is a part of a broader generalization that bans movement out of moved elements. For analyses of why this is not possible, see Lasnik and Saito (1992), Takahashi (1994), Müller (1998) & (2010), Corver (2014), Bošković (2018), a.o. For the purpose of this squib, the empirical generalization alone suffices.

The structure in (13a,b) is precisely a situation of *wh*-movement out of the topicalized DisjP. Because it is not possible for Op to move to Spec, CP from this position, the alternatives in the DisjP cannot be put under question.

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[4] While the disjoined PP can be topicalized (13b), it may be difficult to imagine topicalizing a polar disjunction (13a), which may be the reason why (13a) is bad. In any case, this point of view does not conflict with the goal of this subsection, which is to rule out (13a,b).

[5] Lasnik and Saito (1992) claim that *wh*-movement of a type-e element out of a topicalized DP is not completely unacceptable. This does not weaken the claim made in this squib because the topicalized DisjP examined in this paper is not nominal. In addition, *whether* and Op are likely not type e. Section 2.4 will present data from Bengali that suggest that it is indeed unacceptable to move Op out of a topicalized phrase.

2.2. Why DisjP can be put under question when immediately following *whether*

We may wonder why the alternatives in the DisjP that immediately follows *whether* can be put under question, as the same empirical generalization should rule out extraction of *whether* from the topicalized DisjP as well.

I argue that this is because *whether* as a *wh*-phrase can pied-pipe. There is then another parse of (3) and (7), where the DisjP following *whether* is pied-piped by *whether* rather than topicalized:

(16)   a. I don't know [$_{DisjP}$ whether [$_{Disj'}$ or not]]$_i$ John will arrive this weekend t$_i$.
       b. I don't know [$_{DisjP}$ whether [$_{Disj'}$ on Saturday or on Sunday]]$_i$ John will arrive t$_i$.

Recall that in order to put the alternatives in the DisjP under question, all we need is to move *whether* to Spec, CP. We do not care if *whether* pied-pipes other material. (16) satisfies this requirement because the final position for *whether* is in Spec, CP.

Thus, the alternatives in the DisjP that is pied-piped by *whether* can be put under question. This analysis makes a prediction. If we prevent the structure from being parsed as involving pied-piping, then *whether*-sentences without pied-piping should behave like *if*-sentences, and the relevant reading should be lost.

One way to rule out the pied-piping parse is by interpolating an adverb or a parenthetical between *whether* and DisjP, adapting a test first developed by Rudin (1988) for Bulgarian. For instance, regular *wh*-sentences with pied-piping become ungrammatical once the *wh*-word and the pied-piped material are interpolated:

(17)   a. *I wonder to, according to Mary, whom you talked.
       b. *I wonder on, actually, what day you left.
       c. *I wonder about, fortunately, whose book you talked.

Interpolation between *whether* and the DisjP makes the *whether*-sentences *if*-like, as the relevant readings are no longer available:

(18)   a. *I don't know whether, according to Mary, or not John will arrive this weekend
                                                                                (*Y/N)
       b. *I don't know whether, actually, or not John will arrive this weekend.   (*Y/N)
       c. *I don't know whether, fortunately, or not John will arrive this weekend. (*Y/N)
 (19) a. I don't know whether, according to Mary, on Saturday or on Sunday John will
          arrive.   (*Alt)
       b. I don't know whether, actually, on Saturday or on Sunday John will arrive.(*Alt)
       c. I don't know whether, fortunately, on Saturday or on Sunday John will arrive.
                                                                                (*Alt)

The interpolation test shows that pied-piping is the reason why the alternatives in the DisjP that follows *whether* can be put under question. Once we rule out the pied-piping parse by interpolation, the relevant readings also disappear.

Another piece of evidence that *whether* can pied-pipe DisjP comes from sluicing. Assuming that sluicing deletes TP or $\bar{\text{C}}$, the only element that can survive sluicing is Spec, CP. Material pied-piped by the *wh*-phrase survives sluicing.

(20)   a. John talked to someone, but I don't know to whom ~~he talked~~.
       b. John left on some day, but I don't know on which day ~~he left~~.

Thus, material that survives sluicing must be the *wh*-phrase itself or the material pied-piped by the *wh*-phrase. *Whether* plus a DisjP can be remnants from sluicing, indicating that the DisjP must have been pied-piped by *whether*:[6]

(21)   I know that John will arrive sometime on the weekend. I'm just not sure whether on Saturday or on Sunday.

Recall that the phenomenon that this analysis tries to capture is the contrast between *whether*-sentences and *if*-sentences. If *whether*-sentences allow the relevant readings because of a parse in which *whether* pied-pipes DisjP, we may wonder whether Op can pied-pipe DisjP as well.

Even if it can, the *if*-sentences (13a,b) that were under analysis in section 2.1 cannot be analyzed as Op pied-piping because of the incorrect word order. If Op can pied-pipe DisjP, we should be able to see the following word order, which is also ungrammatical:

(22)   a. *I don't know [$_{DisjP}$ Op [$_{Disj'}$ or not]]$_i$ if John will arrive this weekend t$_i$.
       b. *I don't know [$_{DisjP}$ Op [$_{Disj'}$ on Saturday or on Sunday]]$_i$ if John will arrive t$_i$.

There are two possible reasons why (22a,b) are bad. First, they violate the Doubly-Filled Comp Filter, which prohibits overt occurrence of both the head (*if*) and its specifier (DisjP). Second, it is possible that phonologically null elements cannot pied-pipe, so Op cannot pied-pipe the DisjP, unlike *whether*. I do not commit to a particular reason here, noting only that (22a,b) can be ruled out by one of them.

Because the pied-piping parse is unavailable for *if*-sentences, we predict the *if*-counterpart of (21) to be ungrammatical, which is the case:

(23)   *I know that John will arrive sometime on the weekend. I'm just not sure if on Saturday or on Sunday.

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[6] All my 6 informants accepted (21), which is striking because *whether* on its own resists sluicing:

(i) *I know that John will arrive on either Saturday or Sunday, I just don't know whether.

The acceptability of (21) suggests that *whether*-sluicing is possible, but only possible when *whether* pied-pipes. I leave it to future research why this is the case.

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2.3. An additional reading of (5)-(8)

In addition to the Alt reading, (5)-(8) also have a Y/N reading, i.e. 'I don't know which of the following is true: (1) John will arrive on a weekend day (either Saturday or Sunday), or (2) he won't arrive on either of those days.'

The discussion so far has only concerned the presence or absence of Alt reading of (5)-(8). Why is the Y/N reading always available for them?

Following Larson (1985), I assume that unlike other kinds of DisjP, the polar disjunction *or not* can be unpronounced. The Y/N reading then comes from a parse where *whether* / Op originates as the sister of this unpronounced *or not*. The following sentences add the covert *or not* to (5)-(8) and derive the Y/N reading.

(24) I don't know whether$_i$ John will arrive on Saturday or on Sunday (t_i or not).
(25) I don't know Op$_i$ if John will arrive on Saturday or on Sunday (t_i or not).
(26) I don't know whether$_i$ on Saturday or on Sunday John will arrive (t_i or not).
(27) I don't know Op$_i$ if on Saturday or on Sunday John will arrive (t_i or not).

Because *whether* / Op does not originate from the PP DisjP *on Saturday or on Sunday*, this PP DisjP can be topicalized freely, which does not affect the Y/N reading:

(28) I don't know whether$_i$ [on Saturday or on Sunday]$_j$ John will arrive t_j [$_{DisjP}$ t_i or not].
(29) I don't know Op$_i$ if [on Saturday or on Sunday]$_j$ John arrive t_j [$_{DisjP}$ t_i or not].

2.4. Bengali and Polish

Due to the presence of the Y/N reading, the contrast between (8) on the one hand and (5)-(7) on the other is not about categorical grammaticality. If there is a language whose counterparts for (5)-(8) do not have the Y/N reading to begin with, then this contrast can be sharpened to one about categorical grammaticality.

Bengali and Polish are languages whose counterparts do not have the Y/N reading. First, in Bengali when the temporal DisjP stays in-situ in (30), it only has Alt reading.[7]

(30) Rubai   ki sonibar   na robibar rôwna   hoeche?
       Rubai   Q Saturday   or Sunday depart   happen.PRES
      Literal Meaning: 'Did Rubai depart on Saturday or on Sunday?'
      ✓Alt Reading: Which of the following is true: (1) Rubai left on Saturday, or (2)
      Rubai left on Sunday?
      *Y/N Reading: Which of the following is true: (1) Rubai left on a weekend day, or
      (2) Rubai didn't leave on a weekend day?

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[7] I am grateful to Neil Banerjee for providing Bengali judgments. The Bengali facts are the same as Hindi, with the only difference being that Hindi only has one 'or'. I do not apply my analysis to Hindi due to space limit, but one can assume it does apply.

Later I will discuss why it does not have the Y/N reading, but let us first observe that when the temporal DisjP moves to precede *ki*, the sentence becomes ungrammatical:

(31) *sonibar   na robibar ki Rubai   rôwna   hoeche?
       Saturday   or Sunday   Q   Rubai   depart   happen.PRES   (*Alt)

I argue that this movement of the DisjP before *ki* is topicalization of the DisjP.[8] In addition, suppose that Bengali *whether* has the same derivational history as English *whether* and Op (origination as the sister of DisjP and then movement to Spec, CP), and that similar to Op, Bengali *whether* is phonologically null. Thus, topicalization of the temporal DisjP in (31) traps this null *whether* and causes ungrammaticality.

Having shown that the contrast is sharpened in Bengali due to the absence of the Y/N reading, I will now explain why the Y/N reading is absent. Bengali has two different lexical items for 'or', *na* and *ba*, which will be glossed as 'or1' and 'or2' respectively. (30) and (31) use *na* 'or1'. In order to obtain the Y/N reading, we need to change *na* 'or1' in (30) to *ba* 'or2'. We may also add *na na* 'or1 not', which can be unpronounced:

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[8] Bengali allows many different elements to appear before *ki*, but not idiomatic objects. This suggests that the movement to precede *ki* is topicalization because idiomatic objects resist topicalization.

(i) Rubai <ki>Munai-ke   <ki>   gas   <*ki> diy-e   <ki>   porishkar kôr-a-l-o
     Rubai Q Munai-OBL   Q   gas   Q   give.PRFT   Q   clean   do-CAUS-PST-3RD
     'Did Rubai get Munai to clean by stoking her ego?'

The element preceding *ki* is presupposed, which also suggests its status as a topic. Elements following *ki* are not presupposed and open for confirmation in continuation:

(ii) Rubai ki Munai-ke   boi-ţa   di-l-o...
     Rubai Q Munai-OBL   book-CL   give-PST-3RD
     'Did Rubai give the book to Munai…'

   a. #na   Rati
       or2   Rati
       'or Rati did?'

   b. na   Rati-ke
       or2   Rati-OBL
       'or to Rati?'

   c. na   magazine-ţa
       or2   magazine-CL
       'or the magazine?'

   d. na   na
       or2   not
       'or not?'

The tests with idiomatic objects and continuation are adapted from Bhatt and Dayal (2017).

(32) Rubai   ki sonibar   **ba**   robibar rôwna   hoeche   (**na**   na)?
    Rubai   Q Saturday   or2   Sunday depart   happen.PRES or1   not
    Literal Meaning: 'Did Rubai depart on Saturday or on Sunday or not?'(✓Y/N; *Alt)

I argue that *na* and *ba* are in complementary distribution. The disjunction coordinator takes the form of *na* if and only if it has been local to *whether*, otherwise it appears as *ba*. What this means is that null *whether* must originate as the sister of the DisjP coordinated by *na*, and not as the sister of the DisjP coordinated by *ba*.

    In (30) the temporal DisjP is coordinated by *na*, indicating that null *whether* must originate from its sister position, therefore (30) only has the Alt reading. Topicalization of the temporal DisjP in (31) traps this null *whether*, and rules out the only reading it has. The use of *ba* in the temporal DisjP in (32) indicates that *whether* cannot have originated as the sister of the temporal DisjP, but it must have been the sister of the polar disjunction *na na*. Therefore, (32) only has the Y/N reading.

    Strikingly, in parallel to the English example (29), topicalization of the temporal DisjP coordinated by *ba* 'or2' in (33) does not affect the Y/N reading:
(33) sonibar   **ba**   robibar ki Rubai   rôwna   hoeche   (**na**   na)?
    Saturday   or2   Sunday Q Rubai   depart   happen.PRES or1   not   (✓Y/N)

Because in (33) *whether* cannot have been the sister of the temporal DisjP coordinated by *ba* 'or2', topicalization of this DisjP does not affect *whether*. *Whether* starts as the sister of the polar DisjP and subsequently moves to Spec, CP, creating the Y/N reading.

    Similar to Bengali, Polish has two lexical items for 'or' as well, *czy* and *albo*.[9,10] *Czy* is 'or1', appearing only when it has been local to *whether*, which in Polish happens to be have the identical form *czy* as well.[11] *Albo* 'or2', on the other hand, appears when *whether* has not been local to it.

    In (34a) the temporal DisjP is coordinated by *czy* 'or1', so only the Alt reading is available. When *czy* is substituted for *albo* 'or2' in (34b), only the Y/N reading is available. Note that in Polish the polar disjunction cannot be pronounced, but one can assume the Y/N reading in (34b) comes from that covert *or not*.

(34)   a. Nie wiem   czy   Jan   przyjedzie   w sobotę   **czy**   w niedzielę.
    Not   know.1sg   whether Jan   arrive.perf.3sg   in Saturday or1   in Sunday
    Literal Meaning: 'I don't know whether Jan will arrive on Saturday or on Sunday.'

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[9] I am grateful to Barbara Citko, Barbara Tomaszewicz, and Bartosz Wiland for providing Polish judgments.
[10] In fact, Polish has three 'or's, *czy*, *albo* and *lub*. I omit *lub* because it is irrelevant to the current discussion.
[11] This morphological identity is not accidental, and the next subsection will provide an analysis of it.

✓Alt Reading: I don't know which of the following is true: (1) Jan will arrive on Saturday, or (2) Jan will arrive on Sunday.

*Y/N Reading: I don't know which of the following is true: (1) Jan will arrive on a weekend day, or (2) Jan will not arrive on a weekend day.

b. Nie wiem czy Jan przyjedzie w sobotę **albo** w niedzielę.
Not know.1sg whether Jan arrive.perf.3sg in Saturday or2 in Sunday
(*Alt; ✓Y/N)

Based on what we saw in Bengali and the ban on *whether*-movement out of a topicalized phrase, we expect topicalization of the temporal DisjP coordinated by *czy* 'or1' to be ungrammatical, and topicalization of the DisjP coordinated by *albo* 'or2' to not affect the Y/N reading. While the second prediction is borne out (35b), the first is not (35a). Topicalization of the temporal DisjP does not affect the respective reading in both cases:

(35) a. Nie wiem czy w sobotę **czy** w niedzielę Jan przyjedzie.
not know.1sg whether in Saturday or1 in Sunday Jan arrive.perf.3sg
Literal Meaning: 'I don't know whether on Saturday or on Sunday Jan will arrive.'
(✓Alt; *Y/N)
b. Nie wiem czy w sobotę **albo** w niedzielę Jan przyjedzie.
not know.1sg whether in Saturday or2 in Sunday Jan arrive.perf.3sg
(*Alt; ✓Y/N)

In fact, (35a) is not surprising if we assume that Polish *czy* 'whether' is like English *whether* in that it can pied-pipe the DisjP. If *czy* can pied-pipe, then another parse exists for (35a), where the DisjP is not topicalized, but pied-piped by *czy*, and therefore the alternatives in that DisjP can still be put under question.

I cannot argue for *czy*'s pied-piping using the interpolation test because unfortunately, interpolation of any adverb or parenthetical sounds unnatural in its own right.

I will argue from a different angle that *czy* 'whether' can pied-pipe. First, Polish allows its *wh*-phrases to pied-pipe overtly in general (see e.g. Wiland 2010;1). Next, following Wiland (2017), *czy* 'whether' is a *wh*-word because it shares *wh*-morphology *c*- with other *wh*-phrases in Polish, e.g. *co* ('what' NOM/ACC), *cze-go* ('what' GEN), *cz-emu* ('what' DAT), and *cz-ym* ('what' INST/LOC).[12] Therefore, *czy* 'whether' being a *wh*-phrase in Polish should also be able to pied-pipe.

Returning to Bengali, one may wonder why its null *whether* cannot pied-pipe. If it could, the pied-piping parse should exist for (31) and allow the Alt reading. I argue that this parse is not available because Bengali *wh*-phrases cannot pied-pipe overtly in general. In fact, Bengali is a *wh*-in-situ language in the relevant contexts.[13]

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[12] To be precise, Wiland (2017) argues that *c*- [ts] palatalizes to [tʃ] in *czy*.
[13] Bengali allows overt *wh*-movement in embedded clauses of certain predicates, but this is not relevant to the current discussion, as all the examples involve matrix questions.

To summarize, I have shown that the English paradigm can be replicated and sharpened in Bengali and Polish because of the presence of two 'or's. Polish is like English *whether*-sentences in that a fronted DisjP can be understood as being pied-piped.

2.5. Morphology-based argument for feature sharing

This subsection provides an analysis for the two morphologically distinct 'or's in Bengali and Polish. Before doing so, I want to point out that they are not the only languages that distinguish 'or's. In fact, English has two 'or's, too: *nor* appears when it has been local to *neither*, and *or* appears when it has not been local to *neither*. *Neither* has been analyzed as the [+NEG] counterpart of *either*, just as *whether* is the [+WH] counterpart of *either* (e.g. Hendriks 2004; den Dikken 2006). Den Dikken argues that similar to *whether*, *neither* originates as the sister of a DisjP and later moves away.

What Polish and English have in common is that 'or' takes the morphological feature of 'whether' / 'neither' that it has been local to. According to den Dikken, in English *neither* and *nor* share the [+NEG] feature. Polish 'whether' and 'or' even look identical.

I argue that this shared morphological feature between 'whether' / 'neither' and 'or' indicates an agreement relation between them. In agreeing with the disjunction head 'or', Polish 'whether' spreads its [+WH] feature to 'or', and English 'neither' spreads its [+NEG] feature to 'or'. I assume that this agreement between 'whether' / 'neither' and 'or' is universal, though it is not reflected overtly in morphology in all languages. This means that in English *whether* agrees with *or* as well. Furthermore, after agreeing with *whether*, *or* projects the [+WH] feature to the entire DisjP.

This spreading of [+WH] feature explains the optionality of pied-piping by 'whether' in English and Polish. As the interrogative C probes down for the [+WH] feature, the entire DisjP and its specifier 'whether' are both eligible goals because of the presence of the [+WH] feature on them. They are also equidistant to the C probe (Pesetsky and Torrego 2001). If C agrees with the DisjP, the entire DisjP moves to Spec, CP, creating pied-piping effects. If C agrees with 'whether' alone, 'whether' moves by itself.

3. Conclusion

In this squib I observed the puzzle that when a DisjP immediately follows *if*, its alternatives cannot be put under question. This puzzle is part of the empirical generalization that *wh*-movement out of topicalized phrases is not allowed. *Whether*-questions are different because they have another parse in which *whether* pied-pipes the DisjP, putting its alternatives under question. Then I showed that this analysis applies to Bengali and Polish.

There is a remaining question. My informants report that the fronted DisjP cannot coordinate two DPs:

(36) I don't know **whether** John will eat rice or beans.

✓Alt(ernative) Reading: I don't know which of the following is true: (1) John will eat rice, or (2) John will eat beans.

(37) I don't know **whether** rice or beans John will eat.   (*Alt)

Therefore, all the examples in this squib have used PP DisjP. I leave it to future research why there is a difference between fronting a PP DisjP and fronting a DP DisjP.

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