

To yield an alternative question, the topicalized phrase must contain the trace of Op, as shown in (10a,b). This is unacceptable because topicalized phrases may not contain a *wh*-trace (Postal 1972):

(11) *I wonder [what day]_j John thinks that [on t_j]_i you left.

Updating an observation by Lasnik and Saito (1992), I note an exception, i.e. topicalized nominal phrases may contain a *wh*-trace of a type-e element. This does not undermine the argument here because the topicalized DisjP examined in this paper is not nominal. In addition, *whether* and Op are likely not type e.

Analysis for (3) and (6): whether can pied-pipe DisjP. (3) and (6) can be interpreted as alternative questions because they have another parse under which *whether* as a *wh*-phrase pied-pipes the DisjP:

(12) a. I don't know [_{CP} [_{DisjP} *whether* [_{Disj'} or not]]_i C⁰ John will arrive this weekend t_i].
 b. I don't know [_{CP} [_{DisjP} *whether* [_{Disj'} on Saturday or on Sunday]]_i C⁰ John will arrive t_i].

In (12a), *whether* originates as the sister of *or not* and successfully moves to Spec, CP, creating the Y/N reading. (12b) has the Alt reading because *whether* moves from the sister of the PP DisjP to Spec, CP.

The pied-piping parse is not available for *if*-sentences in (2) and (5). If Op could pied-pipe, we would get different word orders from (2) and (5), namely (13a,b), which are ungrammatical:

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

Examples (13a,b) are ruled out by the Doubly-Filled Comp Filter, which prohibits overt occurrence of both the head (*if*) and its specifier (DisjP). Thus, the presence of *if* requires its specifier to be covert.

Additional reading of (4)-(6). In addition to the Alt reading, (4)-(6) also have a Y/N reading, i.e. 'I don't know which 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.' Following Larson (1985), this is because the polar DisjP *or not* can be covert. The Y/N reading arises when *whether* / Op originates as the sister of this unpronounced *or not*.

(14) I don't know {*whether*_i ∅ / Op_i if} John will arrive on Saturday or on Sunday (t_i or not).

(15) I don't know {*whether*_i ∅ / Op_i if} on Saturday or on Sunday John will arrive (t_i or not).

Because *whether* / Op does not originate from the DisjP *on Saturday or on Sunday*, this DisjP can be topicalized freely, which does not affect the Y/N reading of (5) and (6):

(16) I don't know {*whether*_i ∅ / Op_i if} [on Saturday or on Sunday]_j John will arrive t_j [_{DisjP} t_i or not].

3. Predictions: whether behaves like if without pied-piping. Adapting a test developed by Rudin (1988), interpolation of an adverb or a parenthetical between the *wh*-word and the adjacent material X rules out the pied-piping parse of *wh*+X. Once the pied-piping parse is ruled out for *whether*-sentences, they are predicted to behave like *if*-sentences. This is borne out, as the relevant readings for *whether*-sentences disappear with interpolation of an adverb or a parenthetical between *whether* and DisjP:

(17) *I don't know *whether*, {according to Mary / actually / fortunately}, or not John will arrive. (*Y/N)

(18) I don't know *whether*, {according to Mary / actually / fortunately}, on Saturday or on Sunday John will arrive. (*Alt)

Pied-piping by whether in other variants of English. If an English variant that allows *whether* to pied-pipe also allows overt occurrence of both *whether* and C⁰, then we should see *whether* and its pied-piped sister occur before C⁰. This pattern is attested in Old English (19) and Singaporean English (20):

(19) Whether or not did you prepare a lease ...? (20) I don't know *whether* or not will John arrive.

The contrast between (4) and (5) is sharpened in Bengali. (5) is not completely ungrammatical due to the presence of Y/N reading. I show that this judgment is made sharper in Bengali, whose counterpart sentence to (4) lacks the Y/N reading to begin with, and only has the Alt reading. In the Bengali counterpart to (5), topicalization of the temporal DisjP leads to ungrammaticality.

Selected References: Larson. 1985. On the syntax of disjunction scope. Postal. 1972. On some rules that are not successive cyclic.