

WHITHER ‘WHETHER’, AND WHENCE

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Two views on polar ‘whether’

- non-movement analysis (Karttunen 1977, Chomsky 1981, Kayne 1991, Roberts 1993, Chomsky 1995, Radford 2004)
(1) a. $[\text{CP whether ... } [\text{TP ... }]]$
b. $[\text{whether}] = \lambda p_{st}. \lambda q_{st}. q = p \vee q = \neg p$
- movement analysis (Guerzoni 2003, 2004)
(2) a. $[\text{CP whether ... } [\text{TP ... } t_{\text{whether}} ...]]$
b. $[\text{whether}] = \lambda Q_{\langle \langle st, st \rangle, t \rangle}. \exists f_{\langle st, st \rangle}. f \text{ is a polarity } \wedge Q(f)$
- both analyses must accept the following generalization about Modern English: ‘whether’ is silent when it is not dominated by TP
(3) a. (*whether) did John leave
b. *(whether) John left is the question

Comparing the two approaches

- advantage for non-movement analysis: (i) ‘whether’ seems unable to scope below the subject; (ii) ‘whether’ cannot form multiple questions with another wh-phrase
(4) a. did everyone leave $\{\forall x Px, \neg \forall x Px\}, * \{\forall x Px, \forall x \neg Px\}$
b. did John certainly win $\{\Box p, \neg \Box p\}, * \{\Box p, \Box \neg p\}$
c. did only John leave $\{\text{only } p, \neg \text{only } p\}, * \{\text{only } p, \text{only } \neg p\}$
- (5) a. *did John talk to who
b. *who thinks (whether) it’s raining
- advantage for movement analysis: ‘whether’ has wh- morphology and triggers T-to-C movement in the same way as other wh-phrases

Defending the movement analysis

- ‘whether’ is a regular wh-phrase: it denotes an existential quantifier (over polarities) and triggers T-to-C movement in unembedded clauses
- differences between ‘whether’ and other wh-phrases are accounted for by independent constraints, among which is
(6) Partition by Exhaustification (PbE)
A question Q is felicitous in a context C only if elements of Q , once exhaustified with respect to Q , partition C (Fox 2019, 2020)

Quantifiers

- $[\text{whether}_1 \dots Q \dots t_1 \dots]$ results in $\{p, q\}$ where p and q are contraries (in case of $\forall$) and subcontraries (in case of $\exists$)
- PbE requires a homogeneous context, i.e. one which contains no world where the contraries are both false or the subcontraries are both true
(7) PbE $\Rightarrow$ either everyone left or everyone stayed
a. $\#[\text{whether}_1 [\text{everyone}_2 [t_1 [t_2 \text{ left}]]]] = \{\text{everyone left, everyone stayed}\}$
b. $\#[\text{whether}_1 [\text{someone}_2 [t_1 [t_2 \text{ left}]]]] = \{\text{someone left, someone stayed}\}$
- (8) PbE $\Rightarrow$ either John certainly win or he certainly lost
a. $\#[\text{whether}_1 [\text{certainly } [t_1 [\text{John won}]]]] = \{\Box \text{John won, } \Box \text{John lost}\}$
b. $\#[\text{whether}_1 [\text{possibly } [t_1 [\text{John won}]]]] = \{\Diamond \text{John won, } \Diamond \text{John lost}\}$
- but the quantifiers are infelicitous in such contexts due to independent constraints
(9) did the Argentinians/#every Argentinian win (the soccer game)?
 $\rightarrow$ prefer ‘the’ to ‘every’ in homogeneous context! (Löbner 1985, Schwarzschild 1994, Heim 1991, Sauerland 2008)
- (10) look out the window and tell me whether it is (#certainly) raining
 $\rightarrow$ Use S instead of $\Box$ S if the (local) context entails $\Box S \vee \Box \neg S$ (von Stechow & Gillies 2010)
- (11) (#some) Italians come from a warm country
 $\rightarrow$ S is infelicitous if it is contextually equivalent to a formal alternative S' which is logically stronger (Magri 2009, Bar-Lev & Fox 2023)

Focusing adverbs

- answer to $[\text{wh}_1 \dots \text{FA}_C \dots t_1 \dots]$ requires clefting of the wh focus (Orr et al. 2026)
(12) What did John only_C eat t_1 in Paris?
a. $\#$ John only ate crepes in Paris
b. Crepes is what John only ate in Paris
- it is not possible to cleft polarities, i.e. not possible to express the meaning in (13)
(13) $\lambda p. \neg p$ is the f such that $[\text{ONLY}_C [f [\text{John talked to Mary}_F]]]$
- assuming that a question is felicitous only if there is a way to answer it, we predict
(14) $\#[\text{whether}_1 [\text{ONLY}_C [t_1 [\text{John talked to Mary}_F]]]]$
 $= \{\text{John only talked to Mary}_F, \text{John only didn't talk to Mary}_F\}$
- the same holds for ALSO_C and $\text{EVEN}_C/\text{EVEN}_C^{\text{NPI}}$ (Rooth 1985)

Multiple questions

- the question in (15) cannot satisfy PbE
(15) $[\text{whether}_2 [\text{who}_1 [t_2 \text{ John talked to } t_1]]]$
 $= \{m, s, m \wedge s, \neg m, \neg s, \neg(m \wedge s)\}$
a. suppose C contains worlds where John talked to both Mary and Sue, then $C \cap \text{exh}(m)$ overlaps with $C \cap \text{exh}(s)$
b. suppose C does not contain worlds where John talked to both Mary and Sue, then $C \cap \text{exh}(m \wedge s) = \emptyset$
- a challenge is presented by (16), which presupposes that at least one person is opinionated
(16) $[\text{whether}_2 [\text{who}_1 [t_1 \text{ thinks } [t_2 \text{ it's raining}]]]]$
 $= \{\Box_j p, \Box_j \neg p, \Box_m p, \Box_m \neg p, \Box_{jm} p, \Box_{jm} \neg p\}$

Speculations on Neg-Raising

- the ‘neg-raising’ reading of (17) may come about by (17b) being the QUD
(17) John doesn’t think it’s raining
a. $[\text{whether}_1 [t_1 [\text{John thinks } [\text{it's raining}]]]] \rightarrow$ non-neg-raising reading
b. $[\text{whether}_1 [\text{John thinks } [t_1 [\text{it's raining}]]]] \rightarrow$ neg-raising reading
- given that the presuppositions of factives project universally in questions (Abrusán 2007), we predict that there are no factive neg-raisers (Kiparsky & Kiparsky 1970)
(18) $\#$ who does Fred know is the tallest member of our team
(19) John doesn’t know it’s raining
a. $[\text{whether}_1 [t_1 [\text{John knows } [\text{it's raining}]]]] \rightarrow$ non-neg-raising reading
b. $\#[\text{whether}_1 [\text{John knows } [t_1 [\text{it's raining}]]]] \rightarrow$ neg-raising reading

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