WH - Quantifier Interactions
(Based on May (1985))

(1) What did everyone buy  (ambiguous: group purchase WH > ∀; or 'family of questions' ∀ > WH)
(2) Who bought everything (unambiguous; no family of questions)
(3) Who saw everyone  (unambiguous; no family of questions)

(4) 

(5) According to May, (4) would have the family of questions reading if it were well-formed.

(6) Constraint: Intersecting A'-categorial paths must embed, not overlap. [Path Containment Condition of Pesetsky (1982)]

(7) 

(8) How does (7) provide the family of questions reading?
(9) a  IP (=S) is not a maximal projection.
   b  Operators that govern each other are free to take on any type of relative scope relation. (7) represents both readings.)
(10) Why is (2) good at all, on any reading?

(11) Why is (2) good at all, on any reading?

(12) The target of QR is not limited to IP.

(13) Adjunction creates a 'segmented' category, rather than an additional maximal projection. A segment does not block c-command. [Borrowed by Chomsky in Chomsky (1986).]

(14) Then why doesn't (11) give rise to a family of questions reading?

(15) Even a segment of a maximal projection blocks government.

(16) Who do you think [everyone saw t at the rally]

(17) Williams (1986) observes that this example of May's, which as May notes does have the ambiguity, causes a difficulty for May's analysis:

(18) Everyone must scope out of the embedded finite clause, but this is normally not possible, as illustrated in (19).

(19) Someone thinks everyone saw you at the rally

(20) Larson and May (1990) make a very similar point: "whereas quantified subjects can be given scope out of infinitives, this is not generally possible with tensed complements." "...whereas [(21)a] permits a wide-scope reading for everyone vis-à-vis someone and believe, according to which for each person x there is someone who believes x is a genius, [(21)b] permits only a narrow-scope reading for everyone, according to which there is some person who believes genius to be a universal characteristic".

(21)a Someone believes everyone to be a genius
   b Someone believes (that) everyone is a genius

(22) A possible alternative treatment:
(23) What is the nature of the WH-Q interactions, and what is the relevant property of the WH?

(24) What did everyone\textsubscript{i} buy with his\textsubscript{i} bonus money Lasnik and Saito (1992)

(25) Surprisingly, (24) lacks the group purchase reading. This suggests that May's original ambiguity is not actually a scope ambiguity, since every\textsubscript{...} can bind a singular pronoun whether it has wide or narrow scope:

(26) Some coach gave every lineman\textsubscript{i} his\textsubscript{i} assignment

(27) Conjecture: Group purchase reading involves a 'group' interpretation of the universal, not a genuine quantificational reading. The quantificational reading is involved in the family of questions reading.

(28) Everyone bought something
(29) Someone bought everything
(30) Everyone\textsubscript{i} bought something with his\textsubscript{i} bonus money
(31) A very old idea: what = wh+something; who = wh+someone.
(32) What did you buy
(33) you bought WH-something
(34) WH [you bought _-something]
(35) WH [everyone bought _-something]
(36) What do you think everyone bought

(37) What did you buy

\[\text{CP} \rightarrow \text{NP} \rightarrow \text{C'} \rightarrow \text{IP} \rightarrow \text{what} \rightarrow \text{C} \rightarrow \text{IP} \rightarrow \text{do} \rightarrow \text{NP} \rightarrow \text{IP} \rightarrow \text{everyone} \rightarrow \text{IP} \rightarrow \text{NP} \rightarrow \text{I'} \rightarrow \text{you} \rightarrow \text{I} \rightarrow \text{VP} \rightarrow \text{V} \rightarrow \text{CP} \rightarrow \text{think} \rightarrow \text{IP} \rightarrow \text{NP} \rightarrow \text{I'} \rightarrow \text{t} \rightarrow \text{I} \rightarrow \text{VP} \rightarrow \text{V} \rightarrow \text{NP} \rightarrow \text{bought} \rightarrow \text{t} \]
(38) WH you think [everyone bought _-something]
(39) You think [everyone bought something]
(40) You think that \(\forall x \exists y \mid x \text{ bought } y\)
(41) WH You think that \(\forall x \exists y \mid x \text{ bought } y\)

(42) What does everyone think you bought \(\_\) [Sloan (1991),
pointing out another problem for the analysis in May (1985)]
(43) WH everyone thinks [you bought _-something]
(44) Everyone thinks you bought something
(45) \(\forall x x \text{ thinks } \exists y \mid \text{ you bought } y\)
(46) \(\forall \exists y \mid x \text{ thinks you bought } y\)

(47) May (1977) makes exactly the same factual claim about a
parallel example:
(48) Who did everyone say that Bill saw

(49) What does everyone \(i\) think he \(i\) bought
(50) WH everyone \(i\) thinks [he \(i\) bought _-something]
(51) Everyone \(i\) thinks he \(i\) bought something
(52) \(\forall x x \text{ thinks } \exists y \mid \text{ he bought } y\)
(53) \(\forall x \exists y \mid x \text{ thinks he bought } y\)

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