NPIs in Questions, Disjunction and Ellipsis
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Partly building on [8]'s insight, this paper proposes an ellipsis-based fully unified syntactic and semantic analysis of Y/N (yes/no)-questions, alternative questions, and the nucleus of Strongly Exhaustive WH-questions. The proposal has the following noteworthy ramifications: In their syntax, all Y/N questions and the *nuclei* of Strongly Exhaustive WH-questions contain an overt or covert negation and may therefore host NPIs that occur in its scope.

NPIs in questions. The acceptability of weak NPIs (e.g., *any*, *ever*) in a Y/N- interrogative and in the nucleus of a WH-interrogative (see (1)), has long posed a serious challenge for theories that say that NPIs need a DE (downward entailing) licensor (e.g. [7]).

(1)   Did Mary <u>ever</u> read SS? / Which students have <u>ever</u> read SS   (SS = *Syntactic Structures*)

Furthermore, the mere presence of a question operator does not seem to suffice to license NPIs, otherwise NPIs should be also acceptable in alternative questions as well as in all embedded *wh*-questions. However, alternative questions can never host NPIs, regardless of their syntactic position, as we consistently attested from our informants (contra [9]).

(2)   a. Did John <u>ever</u> play chess or checkers?   (* alternative reading/ ✓Y/N-reading)
          b. Did Mary or John bring <u>anything</u> to the party? (* alternative reading/ ✓Y/N-reading)

Moreover, in embedded questions, their acceptability depends on the embedding verb (C.f. [2].)

(3)   a.   John **wonders** <u>which students</u> had <u>ever</u> read SS.
      b.   *It **surprised** John <u>which students</u> had <u>ever</u> read SS.

A new idea. New empirical facts suggest a novel solution to the problem, within the DE-hypothesis. We observe that an NPI is acceptable when it follows *whether or not*, but not when it is "trapped" between *whether* and *or not*, <u>under plain intonation of *or not*</u>:

(4)   a. *Mary wondered *whether* her students had <u>ever</u> read SS *or* **not**.
      b. Mary wondered *whether or* **not** her students had <u>ever</u> read SS.

The contrast in (4) correlates with [6]'s observation that ellipsis of *any* in declarative clauses is acceptable only when the overt *any* is in the negated clause.

(5) a. *Mary didn't buy ~~any books about linguistics~~ but John did buy <u>any</u> books about linguistics
    b. Mary bought ~~any books about linguistics~~ but John did**n't** buy <u>any</u> books about linguistics.

Analysis: 1.Y/N questions as alternative questions. We propose a unified ellipsis-based syntactic approach to alternative questions such as *Did John play chess or checkers* and Y/N questions such as *Did John play chess* (cf. [8] and [3]). On this view: **A.** *whether or not p*-questions (like (7)) and *whether p or not*-questions (like (8)) have the same underlying form but differ in the ellipsis site; and **B.** *whether p*-questions have two ellipsis options, one like (7) and the other like (8), where *or not* is omitted for conversational reasons later in the derivation.

(6)   Surface schema: *whether p or q*   (I know whether John played chess or checkers)
      Underlying: [… [whether 1 ?[[John played chess] or₁ [John played checkers]]]]
      W/ellipsis: [… [whether 1?[[John played chess] or₁ [~~John played~~ checkers]]]]

(7)   Surface schema: *whether or not p* (I know whether or not John played chess or checkers)
      Underlying: [… [whether 1 ? [[John played chess] or₁ [not John played chess]]]]
      W/ellipsis: [… [whether 1 ?[[~~John played chess~~] or₁ [not John played chess]]]]

(8)   Surface schema: *whether p or not*   (I know whether John played chess or not)
      Underlying: [… [whether 1 ?[[John played chess] or₁ [not John played chess]]]]
      W/ellipsis: [… [whether 1 ? [[John played chess] or₁ [not ~~John played chess~~]]]]

(9)   Surface schema: *whether p*   (I know whether John played chess)
      Underlying: [… [whether 1 ? [[John played chess] **or₁** [**not** John played chess]]]]
      (i) w/ellipsis, cf. (7): [… [whether 1 ?[[John played chess] ~~or₁~~ [~~**not** John played chess~~]]]]
      (ii) w/ellipsis, cf. (8): [… [whether 1 ? [[~~John played chess~~] **(or₁** [**not)** John played chess]]]]

We adopt [10]'s indefinite view of *or* (hence its index above) and assume that quantification and unselective binding by a coindexed *whether₁* is done in the two-step fashion shown in (10).

(10) a. $[[q \ or_1 \ r]]^{g,w} = [\lambda w'. \ g(1) = [[q]] \ or \ g(1) = [[r]] \ and \ g(1)(w') = 1]$

  b. $[[?]]^{g,w} = [\lambda q_{st}. \ \lambda p_{st}. \ p = q]$ (see [5])

  c. $[[whether]]^{g,w} = [\lambda S_{<st, stt>}. \ \lambda p_{<st>}. \ \exists r_{<s,t>} \ s.t. \ S(r)(p) = 1 \ \& \ p(w) = 1]$

  d. $[[whether \ 1 \ ? \ [[John \ played \ chess] \ or_1 \ [John \ played \ checkers]] \ ]]^{g,w} =$
    $[\lambda p. \ p = \text{'that John played chess'} \ or \ p = \text{'that John played checkers'} \ \& \ p(w)=1]$

2. WH-questions. Building on [1], we analyze the Strongly Exhaustive reading of a WH-question, such as in *John knows* <u>*which student read SS*</u>, as containing a *whether-or-not*-question, as shown in (11a); its Weakly Exhaustive one doesn't contain *whether-or-not* (see (11b).)

(11) a. "Strong" reading: For every student x, John knows whether x read SS or x didn't read SS
    $[[\ [which \ students] \ 1 \ [whether \ 2 \ ? \ [t_1 \ read \ SS \ or_2 \ not \ t_1 \ read \ SS]] \ ]]^{g,w} = \lambda p.$ there is an x such that x is a student in w, p = 'that x read SS' or p = 'that x didn't read SS', & p(w)=1

  b. "Weak" reading: For every student x who read SS, John knows that x read SS
    $[[\ [which \ students] \ 1 \ [? \ [t_1 \ read \ SS]] \ ]]^{g,w} = \lambda p.$ there is a x such that x is a student in w, p = 'that x read SS' & p(w)=1

(12) $[[which \ students]]^{g,w} = \lambda Q. \ \lambda w. \ \lambda p. \ \exists x \ [x \text{ is a student in } w \ \& \ Q(x)(p) = 1 \ \& \ p(w)=1\}$

Evidence form Italian appears to corroborate this view. Italian *or not* in *whether or not* is *o meno* (see (13a)). (13b) shows that *or not* may overtly occur in Italian WH-questions:

(13) a. Mario si domanda se verrai **o meno.**   b. M. si domanda chi sia o meno venuto.
      Mario wonders   if (you) will come or not   M wonders who has or not come

Predictions. An overt NPI is licensed only under a covert or overt *or not*. Therefore they are always excluded from alternative questions, which contain no negation (see (6)), and, while both (14b) and (15b) adhere to the grammatical pattern, (14a) and (15a) do not.

(14) Did Mary's students ever read SS?
  a. *whether Mary's students <u>ever</u> read SS ~~or not Mary's students ever read~~ SS   cf. (9(i))
  b. whether ~~Mary's students ever read SS~~ (**or not)** Mary's students <u>ever</u> read SS   cf. (9(ii))

(15) Mary wondered whether her students ever read SS.
  a. *…whether her students <u>ever</u> read SS ~~or not her students ever read SS~~   cf. (9(i))
  b. …whether ~~her students ever read SS~~ (**or not)** her students <u>ever</u> read SS   cf. (9(ii))

In addition, the contrast in (4), with an overt *or not*, is predicted on a par with (15).

(16) *[Mary wondered whether her students <u>ever</u> read SS or not ~~her students ever read SS~~]
   [Mary wondered whether ~~her students ever read SS~~ or not her students <u>ever</u> read SS]

Finally, only "strongly exhaustive" WH- are predicted to license NPIs. Following [2]/[4], we assume that *wonder* selects for strongly exhaustive questions and *surprise* exclusively selects for weakly exhaustive questions (*find out* is context-dependent). Hence the contrasts in (3).

(17) *… surprise [which students]₁ [? [t₁ **ever** read SS]]
   … wonder [which students]₁ [whether₂ [~~t₁ read SS or₂ not~~ t₁ **ever** read SS]]

Further consequences. Languages whose ellipsis options are different from English are correctly predicted to have different NPI-licensing patterns in questions containing *or not*.

Selected References: [1] Guerzoni, E. 2003. *Why Even Ask?*. PhD MIT. **[2]** Guerzoni, E. & Y. Sharvit. 2007: On NPIs in Interrogatives, *L&P*. **[3]** Han, C. & M. Romero. 2004. The Syntax of Whether/Q…Or Questions, *NLLT* 22. **[4]** Heim, I. 1994. Interrogative Complements of *Know*, *IATL*. **[5]** Karttunen, L. 1977. Syntax and Semantics of Questions, *L&P* 1. **[6]** Kayne, R. 1994. *The Antisymmetry of Syntax*; LI: 25. **[7]** Ladusaw, W. 1979. *Polarity Sensitivity as Inherent Scope Relation*. Ph.D. U,T Austin. **[8]** Larson, R. 1985. On the Syntax of Disjunction Scope, *NLLT* 3. **[9]** Nicolae, A. 2013. NPIs in Strongly Exhaustive and Disjunctive Questions. NELS. **[10]** Partee, B. & M. Rooth. 1982. Conjunction, Type Ambiguity and Wide Scope. *WCCF1*.