When and How to Use the Response Particles *yes* and *no*: From a Cross-Linguistic Perspective

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Types of question and possible answers

- A question is a speech act seeking certain information: a speaker requests information from the hearer(s), as described by the question's form and ahearer should respond to a question in a cooperative way (Searl 1969).

  (1)   Wh-question:
  - Q: What did you learn meeting them?
  - A: They are really great. (COCA 2015 SPOK)

  (2)   Polar-question ($\textsc{Pol-Q}$)
  - Q: Do you even know who I was writing that tweet to?
  - A: Yes, you were directing it at ESPN. (COCA 2015 MAG)

  (3)   Alternative question ($\textsc{Alt-Q}$)
  - Q: Do you stick, or do you move on?
  - A: Well, we're going to stay around here for a while. (COCA 1991 SPOK)

Puzzle 1: Bare RESPRTS and propositional meaning

- Polar questions can be answered with the bare response or answering particles.

  (4) Q: Is he nice?
      A: Yes. (=He is nice.)
      A′: No. (=He isn't nice.)

- Puzzle: How can this morphological simple particle a cooperative response and eventually convey a propositional meaning? What is the mapping relation from this simple form to a propositional meaning?

Puzzle 2: Two different systems

- Answering negative POL-Q arises parametric differences. In English, the response *no* confirms the negative proposition of the question while the corresponding *yes* in Korean confirms the negative proposition denoted by the question. Why and how?

  (5) A: Aren't you tired today?
      B′: No. (=I am not tired today.)

  (6) A: Ne onul an phikonhay? (Korean)
          you today not tired?
          'Aren't you tired today?'
      B: Ung. 'yes' (=I am not tired.)

Puzzle 3: Pol-Q vs. Alt-Q

- Polar and alternative questions seem to be similar, but have different answering systems. Why?

  (7) Q: Is the door open?
      A: Yes, it is./No, It isn't.

  (8) Q: Is the door open or is it closed↓?
      A: *Yes, it is./*No, It isn't.
      A: It is open./It is closed.

Puzzle 4: Multifunctions of RESPRTS

- Response particles can be proper answers to both a statement or POL-Q, but does this mean that they are the same in these environments?

  (9) Q: Amy left.

  A: Yes(, she did)./No(, she didn't).

  (10) Q: Did Amy leave?

  A: Yes(, she did)./No(, she didn't).

Goals of this talk

- To show that an interplay of lexical semantics and discourse (rather than syntax alone) plays a key role in the answering systems for polar questions.
- To model this interactive approach within HPSG together with structured discourse interacting with other grammatical components.

Positive and Negative Pol-Q

- Answering positive Pol-Q is straightforward across languages, even with a (negative) polarity item.

    (11) Q: Is there any food left?
         A1: Yes. (=There is some here.)
         A2: No. (=There isn't any here.)

    (12) Q: nwukwun-ka   o-ss-e?
              someone-NOM   come-PST-QUE
              'Did someone come?'
         A1: Ung. (=Someone came.)
         A2: Ani. (=No one came.)

Negative Pol-Q: Polarity-based

- In languages with the polarity system (e.g., English, Spanish, Norwegian, Swedish), the negative particle *no* means the speaker's agreement with the negative proposition (data from Holmberg 2016)

  (13) Q: Är du inte troött? (Swedish)
           are you not tired
           'Are you not tired?'
      A: Nej (jag är inte trött)
           no I am not tired
           'No (I'm not tired)'

  (14) Q: Vous n' en voulez-pas? (French)
           you not of+it want+pres-neg
           'Don't you want it?'
      A1: Si 'yes' (=I want it.)
      A2: Non 'no' (=I don't want it.)

Negative Pol-Q: Truth-based

- In languages with the truth-based system (e.g., Cantonese, Japanese, Korean, Tagalog), it is the positive particle *yes* that is employed for the agreement with the negative proposition denoted by the negative question.

  (15) Q: kimi tukarete nai (Japanese)
         you tired   not
         'Are you not tired?'
     A: hai/un 'yes' (=I am not tired.)

  (16) Q: Lauong b'o lim ka-pi nih? (Taiwanese)
         Lauong not drink coffee Q
         'Doesn't Lauong drink coffee?'
     A: si a. 'yes' (=he doesn't drink coffee)

Key question: having a propositional meaning

- The first key question in the analysis of answering systems to polar questions concerns how answering particles like *yes* and *no* can have sentential interpretations.

- Typical examples again:

  (17) Q: Did the students come?
       A: Yes. (=They came.)

  (18) Q: Haksayng-tul o-ass-e?
           student-PL   come-PST-QUE
           'Did the students come?
       A: Yes.(=They came.)

Syntax-based account

- Kramer and Rawlins (2011), Haegeman and Weir (2015), Holmberg (2013, 2016), and others adopt the movement-deletion approaches for elliptical constructions suggested for fragment answers by Merchant (2001, 2004) and subsequent work, and suggest that the stand-alone answer particle as well as echoed verb are also derived from clausal ellipsis.
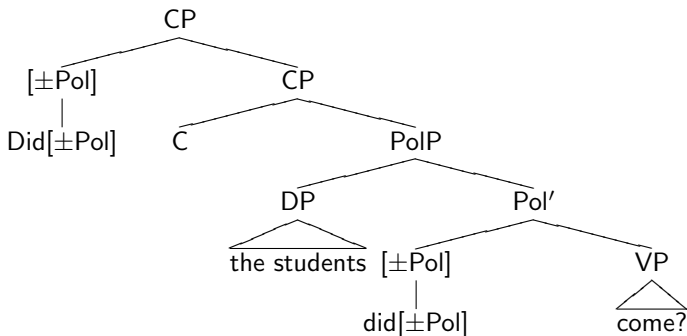
  (19) Q: Did the student come?
       A1: Yes. [~~The student came.~~]
       A2: o-ass-e   [~~haksayng-tul~~ t]. (Korean)
            come-PST-DECL student-PL   t
            'Come' (=The students came)'

Syntax of Pol-Q

- Holmberg (2013, 2016) suggests that polar questions all introduce a polarity variable functioning as the head of the functional projection PolP

(20)

```
                    CP
                 ／    ＼
          [±Pol]        CP
            |        ／    ＼
         Did[±Pol]  C        PolP
                          ／      ＼
                       DP           Pol′
                    ／    ＼      ／    ＼
           the students [±Pol]        VP
                           |           △
                        did[±Pol]    come?
```

Main assumptions

- Polar questions have the set of alternative propositions p and $\neg p$. (Hamblin's (1973) view)
- Polar questions like (20) evoke the variable Pol with two possible values: (20) in turn then means 'What is the value of [± pol] such that the student came?'
- The answer particle functions as binding the polarity variable.

Syntax of RESPRTS

- The answer particle positioning in the Spec of Focus in the CP domain assigns either affirmative (for *yes*) or negative value (for *no*) to the polarity variable of the head Pol.

(21)
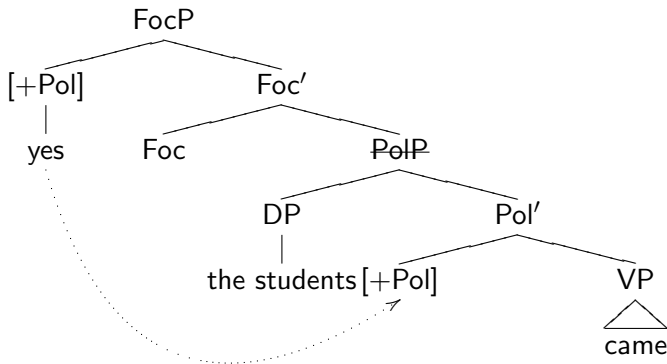
LF (syntactic) identity condition for ellipsis

- The PolP then undergoes ellipsis, subject to the LF-identity condition between the antecedent and the elided part.

  (22)   LF-identity condition
          The elided constituent must have a salient antecedent at
          LF up to assignment of values to variables (Holmberg
          2013:21)

- This syntax-based identity condition is meant to capture the following

  (23) A: Did John not pass the exam?
       B: No. (John did not pass the exam.)

  (24) A: Did John fail the exam?
       B: No. (John did not fail the exam.)

Possible argument: Allowing non-elliptical full sentences

- The proposition that serves as the antecedent for the RESPRTS can be pronounced,

  (25) Q: Did the students come?
  - A1: Yes, they came.
  - A2: No, they didn't come.

  (26) Q: Didn't they come?
  - A1: Yes, they came.
  - A2: No, they didn't come.

Possible argument: a uniform analysis for echo-verbs

- echoing the verb as an answer to polar questions:

  (27) Q: ku chinkwu hakhoy-ey   o-ass-e?   (Korean)
            the friend conference-to come-PST-QUE
            'Did the friend come to the conference?

      A1:   ung o-ass-e.
            yes. come-PST-DECL
            'Yes. (They) came.'

- The answers in (27) can be generated through the same movement-deletion operation.

  (28)   [$_{FocP}$ o-ass-e [$_{PolP}$ ~~ku chinkwu hakhoy-ey [t]~~]]].

- But note that there is no requirement for the tense and modality.

  (29)   A2: o-ass-tentey
            come-PST-DECL
            '(I saw) They came.'

Identity issue: mismatch in the polarity values

- With the LF-identity condition, what happens when the polarity value of the answer particle does not match with that of the putative antecedent linked to the polar question?

  (30) Q: Does he drink coffee?
       A: No (Nope). (=He doesn't drink coffee.)

- The antecedent is a positive statement, but the negative answer means a negative proposition.

Suggested solution

- H suggests that in terms of the interpretability, the negative feature of the negative particle is interpretable while the one in the putative clause is uninterpretable (because of its antecedent):

  (31) $[_{FocP}$ no $_{[iNeg]}$ $[_{PolP}$ he $[_{Pol}$ does$_{[+pol]}$ $^{[NEG}$ $_{[uNeg]}$ $[_{TP}$

       drink coffee]]]]]

- The LF identity condition with the antecedent assigns a 'positive' value to the head of PolP because of the positive statement, but then there is a feature clash with the 'negative' value of the particle *no*. The only option is to assume the negation *not* to be visible or uninterpretable.

Identity issue: mismatch in the polarity values

- A similar issue arises:

  (32) A: Doesn't he drink coffee?
       B: Yes, he does.

- The answer *yes* would have the following structure:

  (33) [$_{FocP}$ yes[Aff] [$_{PolP}$ ~~he~~ [$_{Pol}$ ~~doesn't~~$_{[-pol]}$ [$_{TP}$ ~~drink coffee~~]]]]

- The structure has an affirmative focus operator which has no variable
  to bind since the antecedent is already marked negative. The deletion
  of PolP would then give an unwanted interpretation. The suggested
  solution is to alternatively allow TP ellipsis under identity with TP of
  the antecedent:

  (34)   [$_{FocP}$ yes[Aff] [$_{PolP}$ he [$_{Pol}$ does$_{[+pol]}$ [$_{TP}$ ~~<he> drink
          coffee~~]]]]

Account for the three-valued response system?

- The two-valued, syntactic analysis is undermined by the three-valued system (Ginzburg and Sag 2000).
- Languages like Swedish, Danish, Norwegian, French, German, and Old English allow one negative response word and two affirmative particles. For instance, Swedish has two positive particles, *ja* and *jo* and one negative *nei*. The key difference between *ja* and *jo* lies in the presupposition of the polar question (data from Fretheim 2017):

  (35) Q: drack du inte upp ditt kaffe?
       drank you not up your coffee
       'Did you not drink up your coffee?'
    A1: nej. 'No. (I didn't.)
    A2: #ja.
    A3: jo. 'Yes. (I did.)

Three-way answering system: French

- French also has three answering particles: one negative particle *non* and two positive answering particles *oui* and *si*. The particle *oui* requires a positive discourse antecedent while *si* presupposes a negative one (see Ginzberg and Sag 2000 also, pc with Anne).

  (36) Q: Est ce que Mimi est sérieuse?
           'Is Mimi diligent?'
       A: oui/non

  (37) Q: Est ce que Mimi n'est pas sérieuse
           'Isn't Mimi diligent?
       A: *oui/si/non

More than LF identity conditions

- Within this type of syntax-based ellipsis analysis, it is crucial to identify the linguistic antecedent linked to the answer. But there are cases where it is hard to identify the antecedent.

- Multi-functions of the answering particle

  (38) My father gave you my number in the men's locker room at the country club? He said what? No! No, I am not interested in going to a concert with you. (COCA 2008 FIC)

- Exophoric antecedent (Tian and Ginzburg 2016):

  (39) (Context: A child is about to touch the socket.)
        Adult: No!

Two answering systems again

- We have seen that with respect to answering negative polar questions, there are two different answering systems, polarity-based and truth-based ones.

   (40) Q: dricker Johan inte kaffe? (Swedish)
            drinks Johan not coffee
            'Does John not drink coffee?'
       A: Nej 'no' (=He doesn't drink coffee.)

   (41) Q: John m jam gaafe? (Cantonese)
            John not drink coffee
            'Does John not drink coffee?'
       A: hai 'yes' (=He does not drink coffee.)

Three possible accounts (Holmberg 2016)

- Is it a matter of cultural convention?
- Is it a matter of the meaning of answer particles?
- Is it a matter of syntactic structures?

Holmberg's (2016) analysis

- Holmberg (2013, 2016) attributes the difference of these two systems to different positions of negation in each language. Homlberg's key suggestion is three different types of negation across languages: high, middle, and low negation.

  (42) $[_{CP}$ Foc not $[_{PolP}$ $[\pm Pol]$ $[_{TP}$ ... $[_{NegP}$ not $[_{VP}$ not ... $]]]]]$

Sentential (outer) and constituent (inner) negation

- Two types of negation

    (43) a. You can't not like her.
          b. She wouldn't ever not dress Up for an occasion like that.
              (Holmberg 2016: 156)

- Negation could have the two different scope readings paraphrased in
  (45) (Kim and Sells 2008):

    (44)   The president could not approve the bill.

    (45) a. It would be possible for the president not to approve the
              bill.
          b. It would not be possible for the president to approve the
              bill.

Inner negation or 'negative neutralization'

- Even in the polarity-based system of English, there are examples where the answer particle *yes* could mean the affirmation of the negative statement, which is called 'negative neutralization' (Kramer and Rawlins 2011):

  (46) Q: Is Alfonso not coming to the party?
       A: Yes. (=he is not coming.)

- Inner negation: the adverb-negation ordering ensures the inner negation reading (Holmberg 2016:155)

  (47) Q: Did you purposely not dress up for that occasion?
       A1:   Yes. ('I purposely did not dress up for that occasion.')
       A2:   No. ('I did not purposely not dress up for that occasion; it was by accident.')

Analysis for 'negative neutralization'

- The answer particle *yes* could mean the affirmation of the negative statement, which is called 'negative neutralization' by Kramer and Rawlins (2011):

  (48) A: Is Alfonso not coming to the party?

        B: Yes. (=he is not coming.)

- Holmberg's analysis: to treat the negation *not* in such a case as a constituent negation, not contributing to the polarity value of IP.

  (49)   [$_{FocP}$ [yes, +Pol]   [$_{PolP}$ John $_{Pol}$[is, T, +Pol] [$_{TP}$ [$_{vP}$

  is [$_{vP}$ not coming]]]]]

Holmberg's (2016) claim

- The 'lower' negation is distant enough from the unvalued sentential polarity head not to assign value to it", allowing no feature conflict. This renders *yes* to assign affirmative value to the Pol, different from cases with high or middle negation.

- Within Holmberg's system, it is thus the low position of negation that allows a negative neutralization interpretation.

- Holmberg (2016) claims that in languages with the truth-based answering system, the negation is in the lower position, yielding the desired interpretation.

Immediate Issues: only low negation for the truth-based system?

- Q: Is it true that language with the truth-based system has only low negation?
- In languages like Korean or others, there are surely examples where the negation is in high position, but still induces the truth-based system (Kim 2016).

    (50) a.   Mimi-ka   pwucilenha-n kes   ani-ci?
              Mimi-NOM diligent-MOD thing not-QUE
              'Is it not the case that Mimi is diligent?'
        b.   Ung. 'Yes' (=Mimi is not diligent)

- Holmberg (2016: 199), recognizing such a problem for a similar example in Japanese, suggests that such an example involves the high negation as in English, admitting the vulnerability of his own analysis.

Immediate Issues: sources of the ambiguity

- Ambiguity in the following: Is this because the scope of negation or the different answering systems?

  (51) A: You don't beat your friend?
       B: Yes. (I don't beat my friend or I beat my friend).

Immediate Issues: no ambiguity

- The division of labor between *yes* (agree) and *no* (disagree) is no longer in force in answering negative statements (Roelofsen and Farkas 2015):

  (52) Q: Peter didn't pass the test.
  - A1: Yes, he DIDn't./No, he didn't. (agreement)
  - A2: Yes, he did./No, he DID. (disagreement)

- Even truth-based languages like Mandarin Chinese display mixed systems, depending on context (Li et al. 2016).

Starting points of the Proposal

- Observing the deficiencies in the syntax-based approaches we have discussed, we offer a discourse-based DI (direct interpretation) analysis.

Structured Discourse and QUD

- An influential idea: Discourse is structured around (potentially implicit) Questions Under Discussion (QUD) (Roberts 1996, Ginzburg 1994, 1996, Ginzburg and Sag 2000, among others)

Structured discourse: DGB and QUD

- Dialogue Game Board (DGB) where the contextual parameters are anchored and where there is a record of who said what to whom, and what/who they were referring to (see Ginzburg 1996, 2012, Ginzburg and Fernandex 2010).

- DGB monitors which questions are under discussion, what answers have been provided by whom, etc. The conversational events are tracked by various conversational 'moves' that have specific preconditions and effects.

- As part of contextual information, would have at least the two attributes, SAL-UTT (salient-utterance) and MAX-QUD (maximal-question-under-discussion)

wh-question with DGB information

(53)
$$
\begin{bmatrix}
\text{FORM} \ \langle \ \text{Who did Mimi meet?} \ \rangle \\
\text{SYN} \ \ \mathsf{S} \\
\text{SEM} \ \ \lambda\{\pi^i\}[\text{meet}(m,\ i)] \\
\text{DGB} \ \ \begin{bmatrix}
\text{MAX-QUD} \ \lambda\{\pi^i\}[\text{meet}(m,\ i)] \\
\text{SAL-UTT} \ \left\{ \begin{bmatrix} \text{SYN} & \mathsf{NP} \\ \text{SEM} & \pi^i \end{bmatrix} \right\}
\end{bmatrix}
\end{bmatrix}
$$

Fragment answer in the DI approach

- In terms of syntax, the projection from the fragment to S is licensed by the Head-Fragment Construction (Ginzerburg and Sag 2000, Kim 2015)

  (54) Q: Who did Mimi meet?
       A: Haha.

  (55)

$$
S
$$

$$
\begin{bmatrix}
\text{SEM} & [\text{meet}(m,\ h)] \\
\text{DGB} & \begin{bmatrix} \text{MAX-QUD} & \lambda\{\pi^{\ i}\}[\text{meet}(m,\ i)] \\ \text{SAL-UTT} & \left\{\begin{bmatrix} \text{SYN} & \text{NP} \\ \text{SEM}| & h \end{bmatrix}\right\} \end{bmatrix}
\end{bmatrix}
$$

$$
\mid
$$

$$
\text{NP}
$$

$$
\begin{bmatrix} \text{SEM} & [\ h\ ] \end{bmatrix}
$$

$$
\overbrace{\text{Haha}}
$$
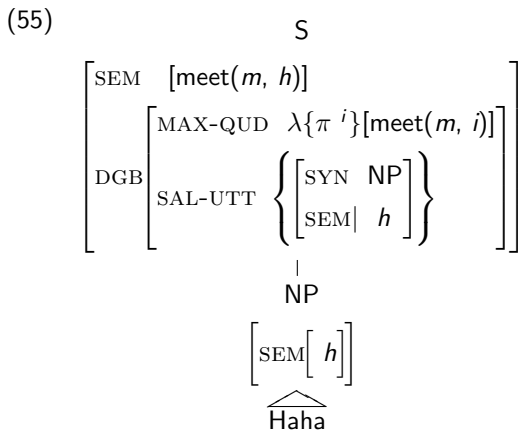
Assumptions for POL-Q and RESPRTS

- Polar questions and answers particles as response involve no ellipsis but are generated 'as is'.
- The stand-alone response particles obtain their interpretations on the basis of the surrounding context.
- They are propositional anaphors. Response particles are anaphoric, propositional lexemes whose antecedent is dependent upon the context (Ginzburg and Sag 2000, Krifka 2013)

Meaning of the polar questions

- In Hamblin style of semantics, polar questions introduce two propositions, one and the negation of the other (p and $\neg\, p$).

  (56)   ⟦Is Mimi smart?⟧ =
          $\{\lambda w[\text{Mimi is smart in w}], \lambda w[\text{Mimi is not smart in w}]\}$

- The response particles *yes* and *no* then confirm the truth of these two values (Hamblin 1973, Holmberg 2013, 2016, Farkas and Bruce 2010, Krifka 2013, among others).

Representation in the feature structure system

- Different from this, we take questions to be propositional abstracts and polar questions are 0-ary proposition abstracts in which the set of abstracted elements is the empty set (Ginzburg and Sag 2000, Biezma and Rawlins 2012).

  (57) a. Is Mimi smart?
  b. $\lambda \{ \quad \}[\text{smart}(m)]$

- Polar questions are thus treated uniformly in terms of an empty PARAMS (parameter) value, but asking the truth value of the propositional (PROP) meaning.

  (58)
  $$\begin{bmatrix} \text{SEM} & \begin{bmatrix} question \\ \text{PARAMS} & \{ \quad \} \\ \text{PROP} & \begin{bmatrix} \text{QUANTS} & \langle \ \rangle \\ \text{NUCL} & \begin{bmatrix} smart(m) \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Typical examples again

- Typical example again:

    (59) Q: Did Mimi meet Haha?
        A: Yes./Maybe./Probably.
        A′:   No./Never./Probably not.

Structure of POL-Q

(60)

$$
\text{S}[\textit{fin}]
$$

$$
\begin{bmatrix}
\textit{question} \\
\lambda\{\ \}\Big[\text{meet}(m,h)\Big] \\
\text{PARAMS} \quad \{\ \}
\end{bmatrix}
$$

V

$$
\begin{bmatrix}
\text{AUX} & + \\
\text{INV} & + \\
\lambda\{\ \}\lambda\text{P}[\text{P}]
\end{bmatrix}
$$

Did

S[\textit{nonfin}]

$$
\begin{bmatrix}
[\text{meet}(m,h)] \\
\text{PARAMS} \quad \{\ \}
\end{bmatrix}
$$

NP

$$
\begin{bmatrix}
m \\
\text{PARAMS} \quad \{\ \}
\end{bmatrix}
$$

Mimi

VP

$$
\Big[\lambda x[\text{meet}(x,h)]\Big]
$$

meet Haha?
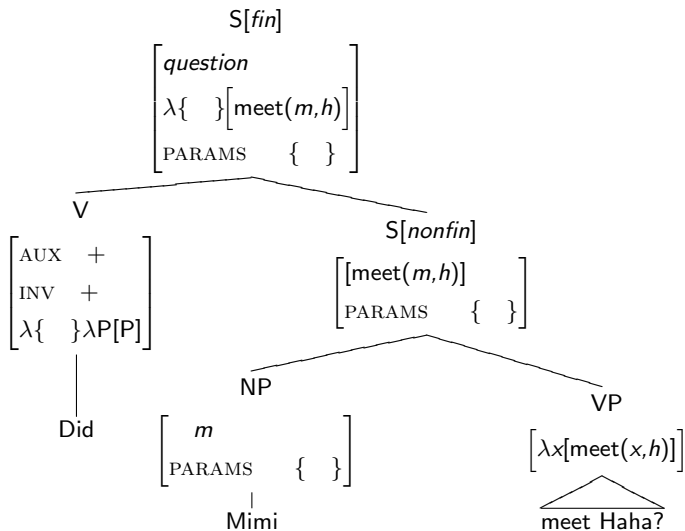
Lexical information of RESPRTS in English

- Expressions like *yes*, *maybe*, *probably*, *sure*, *right*, and so forth, can have stand-alone uses with a complete propositional meaning. These expressions behave like adverbials, but have a propositional semantic content, constructed from a polar question (see Stainton 1995, 2006, and Ginzburg and Sag 2000: 302).
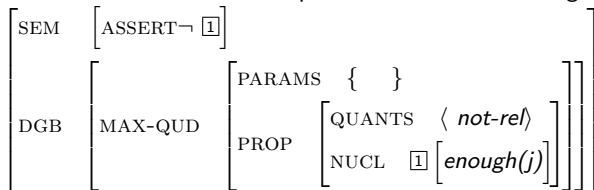
- To be more precisely, we assume that the semantic content of *yes* and *no* as a response to a positive proposition is to confirm or disconfirm not the propositional meaning, but the nucleus meaning of the proposition, not referring to the quantification information.

Lexical information of RESPRTS

- Semantic content for the response *yes*

  (61)
  $$
  \begin{bmatrix}
  \text{SEM} & \begin{bmatrix} \text{ASSERT} & \boxed{1} \end{bmatrix} \\
  \\
  \text{DGB} & \begin{bmatrix} \text{MAX-QUD} & \begin{bmatrix} \text{PARAMS} & \{\ \} \\ \\ \text{PROP} & \begin{bmatrix} \text{QUANTS} & \langle\ \rangle \\ \text{NUCL} & \boxed{1}\begin{bmatrix} meet(m,h) \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}
  \end{bmatrix}
  $$

- Semantic content for the response *no*

  (62)
  $$
  \begin{bmatrix}
  \text{SEM} & \begin{bmatrix} \text{ASSERT} & \boxed{1} \end{bmatrix} \\
  \\
  \text{DGB} & \begin{bmatrix} \text{MAX-QUD} & \begin{bmatrix} \text{PARAMS} & \{\ \} \\ \\ \text{PROP} & \begin{bmatrix} \text{QUANTS} & \langle\ \rangle \\ \text{NUCL} & \boxed{1}\begin{bmatrix} meet(m,h) \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}
  \end{bmatrix}
  $$

Sample structure

(63)

$$S$$

$$
\begin{bmatrix}
\text{SYN} & \text{S} \\
\text{SEM} & \begin{bmatrix} \text{ASSERT} & \boxed{1} \end{bmatrix} \\
\text{MAX-QUD} & \begin{bmatrix} \text{PARAMS} & \{\quad\} \\ \text{PROP} \,|\, \text{NUCL} & \boxed{1}\begin{bmatrix} meet(m,h) \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

|

AdvP

$$
\begin{bmatrix}
\text{SYN} & \begin{bmatrix} \text{POS} & adv \end{bmatrix} \\
\text{SEM} & \begin{bmatrix} \text{ASSERT} & \boxed{1} \end{bmatrix}
\end{bmatrix}
$$

△
yes

Answering a Pol-Q with a quantifier

- Need a finer-grained representation for Pol-Q involving a quantifier

  (64) Q: Did anyone call?
       A: Yes, someone did.

- Semantic content for the response *yes*

  (65)
  $$\begin{bmatrix} \text{SEM} \begin{bmatrix} \text{QUANTS} & \left\langle \exists x(\text{person}(x)) \right\rangle \\ \text{NUCL} & \left[\textit{assert}[\textit{call}(x)] \right] \end{bmatrix} \\[3em] \text{DGB} \begin{bmatrix} \text{MAX-QUD} \begin{bmatrix} \text{PARAMS} & \{\ \} \\ \text{PROP} \begin{bmatrix} \text{QUANTS} & \langle \exists x(\text{person}(x)) \rangle \\ \text{NUCL} & \boxed{1} \left[\textit{call}(x) \right] \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Negative POL-Q

- The analysis for answering a negative question is not different from the one for answering a positive question

  (66) Q: Isn't she clever?
       A: Yes. (=she is clever.)

  (67) Q: Isn't it enough?
       A: No. (=It isn't enough, (I can do more).)

Semantic content of negative POL-Q

- The semantic content for *Isn't she clever?*

(68) a. $\lambda\{\quad\}[\neg clever(i)]$

b.
$$\left[\text{SEM} \begin{bmatrix} question \\ \text{PARAMS} \quad \{\quad\} \\ \\ \text{PROP} \begin{bmatrix} \text{QUANTS} \quad \langle \text{ not-rel } \rangle \\ \text{NUCL} \quad \begin{bmatrix} clever(i) \end{bmatrix} \end{bmatrix} \end{bmatrix} \right]$$

Semantics of RESPRTS

- The semantic content of *yes* and *no* as a response to to a positive proposition is to confirm or disconfirm not the propositional meaning

  (69) a. Semantic content for the response *yes* for 'Isn't Mimi clever?'

$$
\begin{bmatrix}
\text{SEM} & \begin{bmatrix} \text{ASSERT} & \boxed{1} \end{bmatrix} \\
\text{DGB} & \begin{bmatrix} \text{MAX-QUD} & \begin{bmatrix} \text{PARAMS} & \{\ \} \\ \text{PROP} & \begin{bmatrix} \text{QUANTS} & \langle \textit{not-rel} \rangle \\ \text{NUCL} & \boxed{1} \begin{bmatrix} \textit{clever(i)} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$
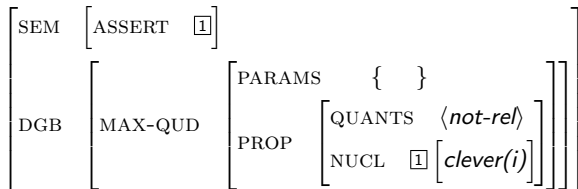
  b. Semantic content for the response *no* for 'Isn't it enough?'

$$
\begin{bmatrix}
\text{SEM} & \begin{bmatrix} \text{ASSERT} \neg & \boxed{1} \end{bmatrix} \\
\text{DGB} & \begin{bmatrix} \text{MAX-QUD} & \begin{bmatrix} \text{PARAMS} & \{\ \} \\ \text{PROP} & \begin{bmatrix} \text{QUANTS} & \langle\ \textit{not-rel} \rangle \\ \text{NUCL} & \boxed{1} \begin{bmatrix} \textit{enough(j)} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

Advantages

- The present system thus offers a uniform analysis for the meaning of answering particles to a positive and negative question. No complexities arise as Homlberg's style of analyses do.
- The particle *yes* and *no* in English picks up the nucleus meaning of the proposition, regardless of the polarity value of the POL-Q.

Languages with the truth-based system

- The head-final language Korean also uses answering particles like *ung* 'yes' and *ani* 'no' as a response to the polar question. But a key difference arises from answers to a negative question, which we repeat here:

  (70) Q: Mimi pwucilenha-ci anh-ci?
              Mimi diligent-CONN not-QUE?
              'Isn't Mimi diligent?'
      A1:   Ung. 'yes' (=Mimi is not diligent.)
      A2:   Ani. 'no' (Mimi is diligent.)

Key differences and assumption

- Different from English, the affirmative particle *ung* 'yes' confirms the negative proposition, not the positive proposition.
- The parametric difference is due to the anaphoric nature of answering particles, not due to the position of negation in syntax.
- The key claim is that in the truth-based system, answering particles refer to the propositional meaning including the QUANT information while in the polarity-based system, answering particles refer to the nucleus meaning

Anaphoric nature of *yes* in Korean

- Semantic content for the response *ung* 'yes'

(71)

$$
\begin{bmatrix}
\text{FORM} & \langle \text{ ung } \rangle \\
\text{SYN} & \begin{bmatrix} \text{POS} & \textit{adv} \end{bmatrix} \\
\text{SEM} & \begin{bmatrix} \text{ASSERT} & \boxed{2} \end{bmatrix} \\
\text{DGB} & \begin{bmatrix} \text{MAX-QUD} & \begin{bmatrix} \text{PARAMS} & \{ \ \} \\ \text{PROP} & \boxed{2} \begin{bmatrix} \text{QUANT} & \langle \textit{ not-rel } \rangle \\ \text{NUCL} & \begin{bmatrix} \textit{diligent(m)} \end{bmatrix} \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

Anaphoric nature of *no* in Korean

- Semantic content for the response *ani* 'no'

(72)

$$
\begin{bmatrix}
\text{FORM} \langle\ \text{ani}\ \rangle \\
\text{SYN} \quad \begin{bmatrix} \text{POS} & \textit{adv} \end{bmatrix} \\
\text{SEM} \quad \begin{bmatrix} \text{ASSERT} & \neg\ \boxed{2} \end{bmatrix} \\
\text{DGB} \quad \begin{bmatrix} \text{MAX-QUD} & \begin{bmatrix} \text{PARAMS} & \{\ \} \\ \text{PROP} & \boxed{2}\begin{bmatrix} \text{QUANT} & \langle\ \textit{not-rel}\ \rangle \\ \text{NUCL} & \begin{bmatrix} \textit{diligent(m)} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

Prediction: Double negation in English and Korean

- English: No double negation is allowed.

  (73) Q: Isn't Mimi diligent?
      B: No. (=Mimi isn't diligent)

- The particle *no* in English just asserts the negation ($\neg$) of the nucleus meaning, not that of the propositional meaning (including the quantification). This yields the following interpretation (cf. Holmberg 2016):

  (74)   [ASSERT $\neg[(\text{diligent}(m))]]$

- Korean: Double negation is licensed: the answer *ani* 'no' means disconfirming the *not-rel* of the proposition 'Mimi is diligent'.

  (75)   [ASSERT $\neg[\neg(\text{diligent}(m))]]$

Exophoric uses

- Repeated example

  (76)   (Context: A child is about to touch the socket.)
          Adult: No!

  (77)
$$\begin{bmatrix} \text{FORM} & \langle \text{ no } \rangle \\ \text{SYN} & \begin{bmatrix} \text{POS} & adv \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{ASSERT} & \neg \; \boxed{1} \end{bmatrix} \\ \text{MAX-QUD} & \begin{bmatrix} \text{PROP} & \begin{bmatrix} \text{QUANT} & \langle \; \rangle \\ \text{NUCL} & \boxed{1} \begin{bmatrix} touch(c,s) \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Hamblin (1973) alternative semantics

- The meaning of a question is a set of propositions, corresponding to answers: positive Pol-Q, negative Pol-Q, and Alt-Q all have similar meaning representations (also adopted by Holmberg 2013, 2016).

  (78)   ⟦Is JB gentle?⟧ =
           {λw[JB is gentle in w], λw[JB is not gentle in w]}

  (79)   ⟦Is JB not gentle?⟧ =
           {λw[JB is gentle in w], λw[JB is not gentle in w]}

  (80)   ⟦Is JB gentle or not? ⟧ =
           {λw[JB is gentle in w], λw[JB is not gentle in w]}

Issues in Hamblin's view

- There are examples where POL-Q and ALT-Q are not interchangeable (Biezma and Rawlins 2012).

    (81)   (Request Context: train conductor to a passenger)
    - a.   May I see your ticket?
    - b.   #My I see your ticket or not?

    (82)   (Inference Context:)
    - a.   Is it raining?
    - b.   Is it raining or not?

Polar and alternative questions

- In ALT-Q, simple answers like *yes* and *no* do not suffice as a proper response. The proper answer is A or not A form.

  (83)　　A or Not:
  　Q:　Is it true or not?
  　A1:　Yes, it is true.
  　A2:　No, it is not true.
  　A3:　*Yes./*No.

  (84)　　ALT-Q and closed disjunctive
  　Q:　Do you want coffee↑ or tea↓?
  　A:　*Yes, I want coffee/tea.
  　A′:　I want coffee/tea.

Accepted Assumptions (Beizma and Rawlins 2012)

- The question operator presupposes that the set of alternatives involved in the question must be among the set of salient alternatives in a context.
- In the case of a polar question, the alternative set handed to the question operator is singleton, and the only requirement is that its content is one of the alternatives that is salient in the context.
- Alternative questions provide a list of alternatives currently in the QUD, and presuppose that no other alternatives are salient.

Different salient information

- Polar questions: In addition to the salient information linked to the QUD, there may be more salient information.

    (85)   Discourse information of *Do you want coffee?*

$$
\begin{bmatrix}
\text{DGB} & \begin{bmatrix}
\text{MAX-QUD} & \begin{bmatrix}
\text{PARAMS} & \{\ \} \\
\text{PROP} & \begin{bmatrix}
\text{QUANT} & \langle\ \rangle \\
\text{NUCL} & \boxed{2}\big[want(y,c)\big]
\end{bmatrix}
\end{bmatrix} \\
\text{SAL-UTT} \left\{\boxed{2}\right\} & \uplus \quad neset
\end{bmatrix}
\end{bmatrix}
$$
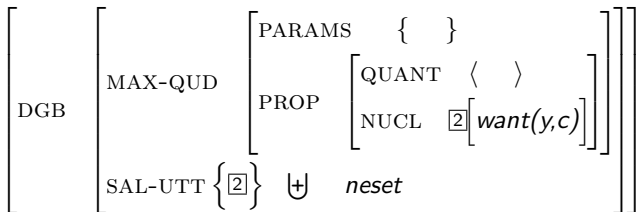
Different salient information

- Alternative questions: The alternatives are the only salient information, constrained as 'constructional constraints'.

(86)   Discourse information of *Do you want coffee or tea?*

$$
\begin{bmatrix}
\text{DGB} & \begin{bmatrix}
\text{MAX-QUD} & \begin{bmatrix}
\text{PARAMS} & \{\ \} \\
\text{PROP} & \begin{bmatrix}
\text{QUANT} & \langle\ \rangle \\
\text{NUCL} & \boxed{A}\big[[\textit{want(y,c)}] \cup [\textit{want(y,t)}]\big]
\end{bmatrix}
\end{bmatrix} \\
\text{SAL-UTT} & \left\{\boxed{A}\right\} \uplus \quad \textit{eset}
\end{bmatrix}
\end{bmatrix}
$$

Multi-functions of answering particles

- H's treatment of ResPrts is dedicated to their use as answers to polar questions, but they can be used in a variety of other contexts that go beyond the answering function.

- With a positive response to an assertion, the responder agrees with the previous utterance and conversely, with a negative response, the responder disagrees with the previous utterance.

   (87) A: I don't know why they're here.
       B: Yes. (=I don't know why they are here) (COCA 2015 SPOK)

   (88) Q: He was getting lazy.
       Q: No, not lazy. Desperate. (COCA 2015 FIC)

Responding to wh-questions

- There are contexts where ResPrts are possible as a response to a wh question.

  (89) A: Why would he do something like that?
       B: Yes, I know. That is the question.

- ResPrts can be used even in imperatives as general response markers.

  (90) A: So go back to the farmhouse and wait for us.
       B: Yes, Ma'am

- The use of ResPrts as a response to dedicated exclamative clause-types is also well-formed

  (91) A: What a beautiful sunset!
       B: Yes, I know. Isnt it gorgeous?

Observations

- ResPrts function as affirming/confirming expressions when they serve to answer polar questions. In all other contexts they serve to express agreement or disagreement with the speech act of the antecedent (wh-question, command, proposition, and so forth).

- Existing syntactic analyses of ResPrts cannot account for these multifunctions of RESPRTS because wh-questions and imperatives, exclamatives do not denote propositions, and hence do not make available a proposition to agree with nor a proposition whose polarity value has to be valued.

Some differences

- Responses to assertions

  (92) A: John speaks Korean really well.
       B: Yes/True/Right/That's right.

- Responses to POL-Q

  (93) A: Does John speak Korean really well?
       B: Yes/*True/*Right/*That's right.

Multi-functions of RESPRTS

- Answers to polar questions

(94)
$$
\begin{bmatrix}
\text{FORM} & \langle \text{yes} \rangle \\
\text{SEM} & \begin{bmatrix} \text{ASSERT} & \boxed{2} \end{bmatrix} \\
\text{DGB} & \begin{bmatrix} \text{MAX-QUD} & \begin{bmatrix} \text{PARAMS} & \{\ \} \\ \text{PROP} & \begin{bmatrix} \text{QUANT} & \langle \dots \rangle \\ \text{NUCL} & \boxed{2} \end{bmatrix} \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

- Responses to other speech acts

(95)
$$
\begin{bmatrix}
\text{FORM} & \langle \text{yes} \rangle \\
\text{SEM} & \begin{bmatrix} \text{AGREE} & \boxed{2} \end{bmatrix} \\
\text{DGB} & \begin{bmatrix} \text{MAX-QUD} & \boxed{2} \begin{bmatrix} \text{PARAMS} & \{\ \} \\ \text{PROP} & \begin{bmatrix} \text{QUANT} & \langle \dots \rangle \\ \text{NUCL} & \dots \end{bmatrix} \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

No interaction with negation

- When RESPRTS function as agreement, it agrees with the the QUD including the quantification information. This predicts no interaction with negation. (Wiltschko 2016)

  (96) Q: Why wouldn't he do something like that?
      A1:   Yes. That is the question.
      A2:   *Yes. That is not the question.
      A3:   No. *That's is the question.
      A4:   No. That's is not the question.

Conclusion

- The answering system to POL-Q and ALT-Q displays another instance of systematic complexities in natural languages which a simply binary system may have difficulties in accounting for.

- The clausal ellipsis analysis takes one word answer particle to be derived by ellipsis from a full sentential expression: yes-no answers would then be a special case of so-called fragment answers.

- However, within the semantic/pragmatic analysis we have sketched here, stand-alone answer particles are just nonsentential utterances with anaphoric nature.

- With the proposed system, the main difference between the polarity-based and truth-based answering concerns the 'anaphoric potential' of the polarity particle and the 'polarity sensitivity' of the question-under-discussion.

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