Language variations in answers to polar questions: A Non-configurational Approach

There are two main issues in understanding answers to polar questions. The first is how answer particles such as *yes* and *no* to polar questions like (1) and (2) get a sentential interpretation.

(1) A: Isn't Mimi diligent?

    B: (#)Yes. (=Mimi is diligent.)

    B′:   No. (=Mimi is not diligent.)

(2) A: Mimi an pwucilenhay?
        Mimi not diligent?
        'Isn't Mimi diligent?'

    B: Ung. 'yes' (=Mimi is not diligent.)

    B′:   Ani. 'no' (=Mimi is diligent.)

The other is how answer particles to negative polar questions yield different interpretations depending on the types of answer systems as seen from English and Korean. As illustrated in the contrast between English and Korean here in (1) and (2), the meaning of *yes* differs. Within the polarity-based system of English, it confirms the positive proposition while in the truth-based system of Korean, *yes* confirms the negative proposition denoted by the question.

As for the first issue of inducing a sentential meaning from the simple answer particles, Holmberg (2013, 2016), adopting Kramer and Rawlins's (2009) main ideas, accept the idea that answer particles to polar questions are basically elliptical expressions with clausal ellipsis (Merchant 2004). Consider the following examples:

(3) a.   A: Is Mimi diligent? B: Yes. (=Mimi is diligent)

    b.   A: Isn't Mimi diligent? B: No. (=Mimi is not diligent)

As represented in (4), the answer particle is taken to be in the Focus position of the CP domain and assigns either an affirmative or negative value to the polarity variable of the head Pol. The remainder PolP (IP) undergoes deletion with LF identity.

(4) $[_{FocP}$ No $_{uNEG}$ [~~$_{PolP}$ she [$_{Pol}$ isn't[$_{iNEG}$] [she diligent]~~]]]

The particle *no* has an uninterpretable NEG feature forming a negation concord chain with *negative* Pol, which disallows a double negation interpretation. In Homlberg's system, there is another version of *no* with respect to the choice and interpretation of negation. The structure of (5a) is given in (5b):

(5) a.   A: Is Mimi diligent? B: No. (=She is not diligent.)

    b. $[_{FocP}$ No $_{iNEG}$ [$_{PolP}$ she [$_{Pol}$ isn't [$_{NEG}$] [she diligent]]]]

In answers to the positive Q in (5a), the particle *no* has an interpretable NEG feature which is assigned to an unvalued Pol head, which eventually meant to allow nonidentity with the antecedent question.

An issue arises with an affirmative answer to a yes-no question:

(6) a.   A: Isn't Mimi diligent? B: (#)Yes. (=She is diligent).

    b. $[_{FocP}$ Yes. [$_{PolP}$ isn't [$_{Pol}$ she diligent]]]]]

The focused polarity feature of the particle *yes* assigns a positive value to the unvalued head of PolP, but the negation NEG assigns negative value, which leads to a feature conflict. This accounts for the weirdness of *yes* in this context.

This also concerns the second issue. Note that in languages like Korean, the positive answer to a negative question as in (2) is acceptable with the meaning that *Yes, she isn't diligent*. The question then arises of what makes such a language variation. Does it have to do with cultural convention, or meaning differences for answer particles, or differences in the syntactic structures? The assumption Holmberg takes is "the negation is distant enough from the unvalued sentential polarity head not to assign value to it", allowing no feature conflict: *yes* assigns an affirmative value to the Pol while the distant negation does not. Within Holmberg's system, the position of negation thus is taken to be the key factor for the variation betrween the polarity-based and the truth-based answering of languages. In languages like Korean, the negation is taken to be within a VP so that it does not affect the Pol value, thus licensing *yes, she is not diligent* interpretation:

(7)   [$_{FocP}$ Yes [$_{PolP}$ Pol [$_{vP}$ NEG...]]]

However, such a syntax-based ellipsis approach encounters several issues. The syntax-based ellipsis account requires either syntactic or semantic identity (mutual entailment requirement) between the antecedent and the elided parts. Note synonymous examples like the following, noted by Krifka (2013):

(8) a.   A: Did John fail the exam? B: No. (= He didn't fail.)

   b.   A: Did John not pass exam? B: No. (= He failed.)

There is a mutual entailment relationship between *fail* and *not pass* but the answer *no* induces different meanings, which led Holmberg (2015) to require syntactic identity for ellipsis in addition. However, note examples like (9) where particle is used with exophoric antecedent (Tian and Ginzburg 2016):

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

There is no syntactic identity condition that we can refer to here. It is not possible to identify any overt antecedent at syntax.

Issues are also arising from a negative answer to a positive statement (see Claus et al. 2016):

(10)   A: He drinks coffee. B: No (Noep). (=He doesn't drink coffee.)

The syntactic identity condition with the antecedent assigns a 'positive' value to the head of PolP because of the positive question, but then there is a feature clash with the 'negative' value of the particle *no*. The only option is to take the negation not to be visible.

In addition, a question remains how to account for the language variation in answering negative questions: the answer particle *yes* means the affirmation of the negative statement. A similar situation happens in English for the so-called negative neutralization examples in English (Kramer and Rawlins 2011):

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

The solution that Holmberg takes is to treat the negation *not* in such a case as a constituent negation (embedded negation), not contributing to the polarity value of IP. Homlberg (2016) also suggests that the lower position of negation is responsible for the variation in the answering system of languages like Japanese and Korean.

However, this structural assumption is untenable when considering the fact that the clearly higher negation (e.g, negative copula *ani-ta*) in these languages also behave in the same way:

(12) a. Mimi-ka   pwucilenha-ci anh-ci?   b.   Ung. 'Yes' (=Mimi is not diligent)
        Mimi-NOM diligent-CONN not-QUE
        'Is it not the case that Mimi is dili-
        gent?'

Observing such deficiencies in the syntax-based approach, we offer a semantic/pragmatic based analysis. In particular, following Ginzburg and Sag (2000) and Krifka (2013), we assume that answering particles *yes* and *no* function as anaphors that pick up propositional discourse referents (propositional lexemes). In addition, we suggest that the language variation has to do not with the differences in the syntax of negation (the position of NegP) but with the lexical properties of the answer particle functioning as a propositional lexeme.

Following Ginzburg and Sag (2000), we take polar questions to be 0-ary proposition abstracts, whose semantic content and its answer can be represented in terms of feature structures. The following is feature information of (3a):

(13) a.   A's semantic content

$$
\left[\text{SEM} \left[\begin{array}{l} \textit{question} \\ \text{PARAMS}\{\ \} \\ \text{PROP} \left[\begin{array}{l} \text{QUANTS} \langle\ \ \rangle \\ \text{NUCL} \left[\textit{diligent(m)} \right] \end{array} \right] \end{array} \right] \right]
$$

   b.   B's semantic content for *yes*:

$$
\left[\begin{array}{l} \text{FORM} \langle \text{yes} \rangle \\ \text{SYN} \left[\text{POS adv} \right] \\ \text{SEM} \left[\text{ASSERT} \boxed{1} \right] \\ \text{CTXT} \left[\text{MAX-QUD} \left[\begin{array}{l} \text{PARAMS}\{\ \ \} \\ \text{PROP} \mid \text{NUCL} \boxed{1}\left[\textit{diligent(m)} \right] \end{array} \right] \right] \end{array} \right]
$$

   c.   B's semantic content for *no*:

$$
\left[\begin{array}{l} \text{FORM} \langle \text{no} \rangle \\ \text{SYN} \left[\text{POS adv} \right] \\ \text{SEM} \left[\text{ASSERT} \neg\boxed{1} \right] \\ \text{CTXT} \left[\text{MAX-QUD} \left[\begin{array}{l} \text{PARAMS}\{\ \ \} \\ \text{PROP} \mid \text{NUCL} \boxed{1}\left[\textit{diligent(m)} \right] \end{array} \right] \right] \end{array} \right]
$$

Note that the answering particle *yes*, functioning as an adverbial expression in the independent clause, represents a complete meaning identified with the propositional meaning of maximal question-under-discussion (QUD). That is, the particle the picks up the nucleus of the propositional meaning from the MAX-QUD and asserts it (see Krifka for a similar idea). The particle *no* differs from *yes* in that its semantic content is asserting the negative value of the propositional nucleus meaning.

The analysis for answering a negative question is not different. The following represents the semantic content of *Isn't Mimi diligent?* in (1):

(14) a. A's semantic content

$$
\begin{bmatrix}
\text{SEM}\begin{bmatrix}
\textit{question} \\
\text{PARAMS} \{\quad\} \\
\text{PROP}\begin{bmatrix}
\text{QUANTS} \langle \textit{not-rel} \rangle \\
\text{NUCL } [\textit{diligent(m)}]
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

b. B's semantic content for *yes*:

$$
\begin{bmatrix}
\text{FORM } \langle \text{yes} \rangle \\
\text{SYN}\begin{bmatrix}\text{POS adv}\end{bmatrix} \\
\text{SEM } [\text{ASSERT } \boxed{1}] \\
\text{CTXT}\begin{bmatrix}
\text{MAX-QUD}\begin{bmatrix}
\text{PARAMS}\{\quad\} \\
\text{PROP}\begin{bmatrix}\text{NUCL } \boxed{1}[\textit{diligent(m)}]\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

c. B's semantic content for *no*

$$
\begin{bmatrix}
\text{FORM} \langle \text{no} \rangle \\
\text{SYN}\begin{bmatrix}\text{POS adv}\end{bmatrix} \\
\text{SEM } [\text{ASSERT } \neg\, \boxed{1}] \\
\text{CTXT}\begin{bmatrix}
\text{MAX-QUD}\begin{bmatrix}
\text{PARAMS}\{\quad\} \\
\text{PROP}\begin{bmatrix}
\text{QUANTS} \langle \textit{not-rel} \rangle \\
\text{NUCL } \boxed{1}[\textit{diligent(m)}]
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

In this system, a negative question is a question whose proposition's semantic content includes a *neg-soa* (negative state of affairs) in its quantification value (QUANTS). The semantic value of *yes* and *no*, as the same for the answers to a positive question, is identified with the NUCL value. No additional mechanism is introduced.

   How about Korean? Answers to a positive question may be the same, but issues arise from answers to a negative question as in (2): the affirmative particle *ung* 'yes' confirms the negative proposition, different from English. We suggest that this is due to the lexical properties of *ung* 'yes' whose semantic content is identified with the propositional meaning including the QUANT information:

(15) a.

$$
\begin{bmatrix}
\text{FORM } \langle \text{ung} \rangle \text{ 'yes'} \\
\text{SYN}\begin{bmatrix}\text{POS adv}\end{bmatrix} \\
\text{SEM}\begin{bmatrix}\text{ASSERT } \boxed{2}\end{bmatrix} \\
\text{CTXT}\begin{bmatrix}
\text{MAX-QUD}\begin{bmatrix}
\text{PARAMS}\{\quad\} \\
\text{PROP}\, \boxed{2}\begin{bmatrix}
\text{QUANT} \langle (\textit{not-rel}) \rangle \\
\text{NUCL } \boxed{1}[\textit{diligent(m)}]
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
$$

4

b.
$$
\begin{bmatrix}
\text{FORM } \langle \text{ani} \rangle \text{ 'no'} \\
\text{SYN } \begin{bmatrix} \text{POS adv} \end{bmatrix} \\
\text{SEM } \begin{bmatrix} \text{ASSERT } \neg\boxed{2} \end{bmatrix} \\
\text{CTXT } \begin{bmatrix} \text{MAX-QUD} \begin{bmatrix} \text{PARAMS}\{\quad\} \\ \text{PROP}\boxed{2}\begin{bmatrix} \text{QUANT } \langle \textit{(not-rel)} \rangle \\ \text{NUCL } \boxed{1}[\textit{diligent(m)}] \end{bmatrix} \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

Note the difference from English. The answering particle *yes* asserts not the value of the NUCL but the value of the proposition (PROP) including the quantification value. This is why the answer particle *yes* in Korean to the negative proposition means not *Mimi is diligent* but affirms the proposition 'Mimi is not diligent'. Meantime, the answer *ani* 'no' means disconfirming the *not-rel* of the proposition 'Mimi is diligent, which eventually mean 'Mimi is diligent'. This means a double negation interpretation, yielding a processing load (Roelofsen and Farkas 2015).

The present system offers a natural account for neutralization examples in English like *Is Mimi not diligent?* in (11). The negation here, as noted by Holmberg (2016), can be a constituent negation, implying that it is not encoded in the QUANT information:

(16)
$$
\begin{bmatrix}
\text{FORM}\langle \text{yes} \rangle \\
\text{SYN } \begin{bmatrix} \text{POS adv} \end{bmatrix} \\
\text{SEM } \begin{bmatrix} \text{ASSERT } \boxed{1} \end{bmatrix} \\
\text{CTXT } \begin{bmatrix} \text{MAX-QUD} \begin{bmatrix} \text{PROP}\begin{bmatrix} \text{QUANT}\langle\,\rangle \\ \text{NUCL } \boxed{1}[\textit{not-diligent(m)}] \end{bmatrix} \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

This means that *yes* asserts the proposition that Mimi is not diligent.

The present system is discourse-based since the information recorded in the QUD plays a key role. This implies that the propositional meaning of answering particles is constructed from a polar question in the context. The analysis then would have no difficulties in picking up a proper meaning of the answering particle in exophoric cases like (9): the syntax-based account would have no identical antecedent.

Another strong support may come from examples with a negative verb in languages like Korean:

(17) A: tap   molu-ci?
        answer not.know-Q
        'Don't you know the answer?'

    B: Ung. (=I don't know the answer)

The verb *molu-* 'not.know' whose meaning is negative has no overt marking for negation, and thus has no way to link the word to the syntactic head Neg. There are numerous negative words with no overt negation marking.

Within the clausal ellipsis analysis in which one word answer particles are derived by ellipsis from full sentential expressions, yes-no answers would then be a special case of so-called fragment answers. However, within the semantic/pragmatic analysis, they are just nonsentential utterances with anaphoric nature. Language variation is just a matter of differences in what they refer to: the truth value of the proposition value of the QUD or that of the nucleus meaning with no quantification value. This also implies that the main difference between the polarity-based and truth-based answering concerns whether the propositional lexeme includes a negative-soa (state of affairs) meaning or not. Thus what matters in polarity answers is the 'anaphoric potential' of the polarity particle and the 'polarity sensitivity' of the QUD. This direction is simpler syntax for language learners than the syntax-based ones.

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