

On the Anaphoric Nature of Particle Responses to the Polar Questions in English and Korean*

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Kim, Jong-Bok. 2017. *On the Anaphoric Nature of Particle Responses to the Polar Questions in English and Korean*. *Korean Journal of Linguistics*, 42-2, 153-177. Across languages, polarity particles like *yes* and *no* alone can be used as responses to the polar (yes-no) questions. This paper offers a discourse-based account of issues concerning the distribution and interpretation of such particles in English and Korean. Arguing against syntax-based analyses, it argues that polarity particles are anaphoric in nature and their interpretation is determined by the antecedent evoked by the context. The paper also suggests that the parametric differences between the two different types of answering system, the polarity-based system (e.g., English) and the truth-based system (e.g., Korean), do not have to do with any syntactic structures of negation or NegP, but they have to do with the anaphoric nature of the particles. The stand-alone yes-no particles in English refer to the nucleus meaning of the proposition evoked from the question-under-discussion while the particles in Korean refer to the propositional meaning including the quantification information of negation. (Kyung Hee University)

Key word: polar questions, answer particle, anaphor, lexicalist, question-under-discussion

1. Introduction

Among the ways to answer yes-no polar questions, *yes* and *no* are the simplest ways to either affirm or reject the proposition denoted by the question, as given in (1):

- (1) A: Are you tired?
B: Yes. (=I am tired.)
B': No. (=I am not tired.)

The answer particle *yes* here confirms the speaker's being

tired while the particle *no* disconfirms the proposition.

There are two main issues in understanding answers to polar questions. The first is how single answer particles such as *yes* and *no* to the polar question get a sentential interpretation as represented in the parentheses in (1). The second issue concerns language variations in the answers to a negative question. Compare the following:

- (2) A: Isn't Mimi diligent?
B: (#)Yes. (=Mimi is diligent.)
B': No. (=Mimi is not diligent.)
- (3) A: Mimi an pwucilenhay?
Mimi not diligent?
'Isn't Mimi diligent?'
B: Ung. 'yes' (=Mimi is not diligent.)
B': Ani. 'no' (=Mimi is diligent.)

As illustrated in the contrast between English and Korean here in (2) and (3), 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.

This paper first critically reviews the clause ellipsis analyses for these two research issues, focusing on Kramer and Rawlins (2011) and Holmberg (2013, 2016). These previous analyses rely on the elaborated syntactic structures and clausal ellipsis to map the stand-alone yes/no answering particles to propositional meanings as well as to account for language differences. After discussing some key issues such syntax-based analyses raise, we offer an alternative view where the answering particles are taken as a type of anaphoric expressions, and the surrounding contextual environment determines their interpretation. We also suggest that the language differences have to do not with syntax but with lexical properties of the answering particles of the language in question.

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2. Syntax-based Analyses

2.1. Kramer and Rawlins (2011)

In accounting for the identical semantic relationship between the single answer particle and its corresponding full sentential response, Kramer and Rawlins (2011) follow a clausal ellipsis analysis for fragment answers:

(4) A: Who did John talk to?

B: Mary.

Merchant (2004) suggests that the fragment answer *Mary* here is derived by movement–deletion operations, as represented in the following:

(5) [_{FocP} Mary [_{TP} John talked to]].

The focus phrase *Mary* moves to the Spec of FocP, and the remaining TP undergoes ellipsis.

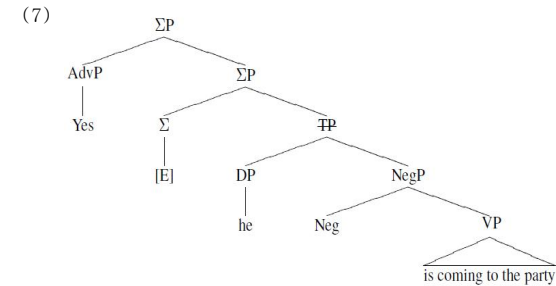
Accepting this clausal ellipsis analysis, Kramer and Rawlins (2011) suggest that stand-alone yes/no particles behave just like such fragment answers. Observe the following:

(6) A: Is Alfonso coming to the party?

B: Yes./No.

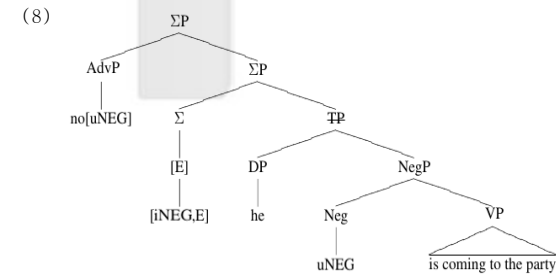
B: Yes, he is coming to the party./No, he isn't coming to the party.

Noting that the isolated answer particle means just as full sentential answers, they take the isolated answer particle to be derived from clausal ellipsis of TP with the feature E on a high Σ head. The particle *yes* or *no* is adjoined to the project of this head, as given in the following:



In Kramer and Rawlins's system, the answer particle *yes* has no polarity feature. The E feature on the head Σ that enforces semantic identity between an ellipsis site and its antecedent licenses the ellipsis of TP (Merchant 2001).

Meanwhile, the particle *no* has an uninterpretable negative polarity feature and at the same time has a negative concord chain which allows only one feature in the chain to be interpreted in order to avoid the double negation interpretation.



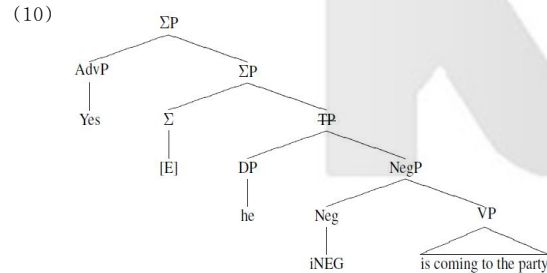
As given here, the semantic identity condition also blocks the interpretable NEG from being in the elided site because the antecedent is a positive question, but the interpretable NEG needs to be under Σ for the ellipsis.

Together with this clausal ellipsis view, they observe the so-called 'negative neutralization' phenomenon involving a negative question:

- (9) A: Is Alfonso not coming to the party?
 B: Yes. (=he isn't coming to the party.)
 B': No. (=he isn't coming to the party.)

Unlike the exchanges in (6), the answer particle *yes* here does not confirm the positive statement: it agrees with the negative proposition. This behavior is unexpected under the standard assumption that English answer system is a polarity-based one where the answer particle agrees with the polarity of the proposition, unlike the truth-based system in which the answer particle *yes* to a negative question confirms the truth of the negative proposition (Kuno 1973).

The structure Kramer and Rawlins (2011) adopt is given in the following:



Kramer and Rawlins claim that in cases like (10), the semantic identity requirement (E) for the ellipsis enforces the interpretable negative feature to be present in the elided site, different from the structure in (7), a response to a positive polar question.

This system suggests that the semantic identity condition is a key factor in licensing negative neutralization. This clausal-ellipsis analysis with the semantic identity condition raises several issues. For

example, the negative answer to a positive question would require another version of *no*:

- (11) A: Is Alfonso coming to the party?
 B: No. (=he isn't coming to the party.)

The antecedent is a positive statement, but the negative answer needs to include a (uninterpretable) negative feature for the correct interpretation, different from (9) with the negative response to a negative question:

- (12) [_{ΣP} No[uNEG], [_{Σ'} [iNEG,E], [_{TP} he [uNEG] is coming to the party]]]

Another possible issue arises from the semantic identity condition of mutual entailment requirement between the antecedent and the elided part. Note synonymous examples like the following, noted by Krifka (2013):

- (13) a. A: Did John fail the exam? B: No. (= He didn't fail the exam.)
 b. A: Did John not pass exam? B: No. (= He failed the exam.)

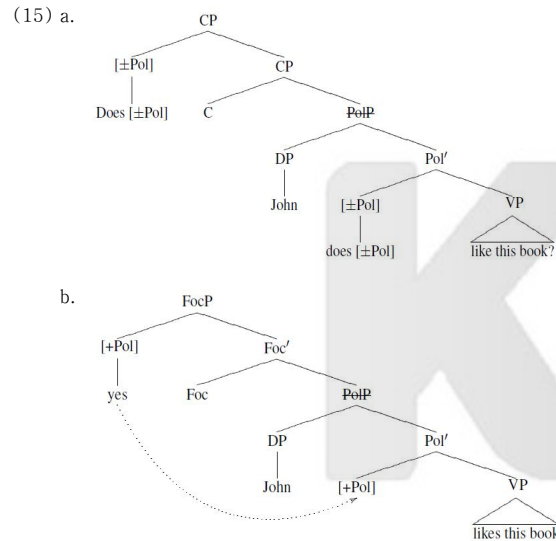
There is a mutual entailment relationship between *fail* and *not pass* but the answer *no* induces different meanings, which led Holmberg (2015) to require syntactic identity for ellipsis in addition.

2.2. Holmberg (2013, 2016)

Holmberg (2013, 2016), adopting Kramer and Rawlins's (2011) main ideas, further develops the syntax-based analysis for answering systems in languages like English and Cantonese. That is, Holmberg also views that stand-alone answering particles involve clausal ellipsis. Consider the following examples:

- (14) a. A: Is Mimi diligent? B: Yes. (=Mimi is diligent.)
 b. A: Isn't Mimi diligent? B: No. (=Mimi is not diligent.)

The assumed structures of the polarity question and answering particle yes are given in the following:



In his system, the polar question has a Pol head with the unspecified value which undergoes movement to the Spec of CP. The answer particle in the Spec of FocP in the CP domain assigns either affirmative (for *yes*) or negative value (for *no*) to the polarity variable of the head Pol. The PolP undergoes ellipsis, subject to the LF-identity condition specifying that “the elided constituent must have a salient antecedent at LF up to assignment of values to variables” (Holmberg 2013: 21). The LF-identity condition thus includes a lexical identity condition for examples like the following:

- (16) A: Did John not pass the exam?
 B: No. (=John did not pass the exam.)

- (17) A: Did John fail the exam?
 B: No. (=John did not fail the exam.)

Holmberg’s analysis offers a simple account for the examples where the polarity value of the answering particles matches that of the polar question. However, it brings several undesirable complexities in the grammar. In his system, the negative particle *no* has two different versions: one as a response to a positive question and the other as a response to an inner negative one (Holmberg 2013: 42). The structure of the answering for (18a) is given in (18b):

- (18) a. A: Does he drink coffee? B: No. (=He does not drink coffee.)
 b. [_{FocP} No _{iNEG} [_{PolP} he [_{Pol} doesn’t_[−Pol] [_{TP} <he> drink coffee]]]]

The particle *no* as a response to the positive question in (18a) has an interpretable NEG feature. This value is assigned to an unvalued Pol head, which eventually allows nonidentity with the antecedent question. The particle *no* forms a negation concord chain with *negative* Pol, which disallows a double negation interpretation. In Holmberg’s system, there is another version of *no* with respect to the choice and interpretation of negation, which is the case with an inner negation as given in (19a):

- (19) a. A: Does he not drink coffee? B: No.
 b. [_{FocP} No _{uNEG} [_{PolP} he [_{Pol} doesn’t_[iNEG] [_{TP} <he> drink coffee]]]]

As given in the structure (19b), the negative polar question assigns the *negative* value to the PolP, but the particle *no* has an uninterpretable NEG feature forming a concord chain with the negative Pol.

Positing two different versions of *no* (interpretable and uninterpretable) seems to be a non-economic way of accounting for the answering system. It would give the grammar undesirable complexities. Another complexity arises with respect to the two different types of ellipsis. The system posits the ellipsis of PolP with LF identity, but when the answer contradicts the negation of a statement, the ellipsis of TP is required (Holmberg 2013: 38):

- (20) A: He doesn't drink coffee.
B: Yes, he does.

The answer *yes* would have the following structure:

- (21) [_{FocP} yes[Aff] [_{PolP} ~~he~~ [_{Pol} doesn't_i [_{PolP} [_{TP} <he> 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:

- (22) [_{FocP} yes[Aff] [_{PolP} he [_{Pol} does_(+Pol) [_{TP} <he> drink coffee]]]]]

The language learners or users are thus asked to choose one of these two different types of ellipsis depending on the antecedent. The same issue arises with an affirmative answer to a negative question:¹

- (23) A: Isn't Mimi diligent (, either)?
B: (#)Yes. (=She is diligent).

The assumed structure of the affirmative answer in (23b) is in the

¹ Holmberg (2016) introduces three different positions for negation: the (highest) one outside IP, the (middle) one inside IP but with sentential scope, and the (low) one with vP scope. The negation in (23) is taken to be the second one while the one in Isn't Mimi diligent, too? is the first one. In such a case, the affirmative answer yes, is acceptable.

following:

- (24) [_{FocP} Yes. [_{PolP} she isn't [_{Pol} 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. However, note that we cannot rule out such examples since language uses yield prevalent uses of the simple affirmative answer as a response to a negative question.

- (25) a. They're a lot less messy. Aren't they? Yes. You don't get your hands dirty. (COCA 2012 SPOK)
b. Wasn't it beautiful? Yes. Wasn't it crazy? Yes. And beautiful. (COCA 2007 FIC)

A similar issue also arises from a negative answer to a positive statement, as also pointed out by Claus et al. (2016):

- (26) A: He drinks coffee. B: No (Nope). (=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 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. What we can observe here is complexities of the analysis when the response particle has a contrasting polarity value to the antecedent.

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):

- (27) A: Is Alfonso not coming to the party?
B: Yes. (=he is not coming to the party.)

The solution that Holmberg suggests is to treat the negation not in such a case as a constituent negation(embedded negation), not contributing to the polarity value of IP. The structure of (27B) is thus something like the following:

- (28) [_{RP} [yes, +Pol] [_{RP} Alfonso Pol[is, T, +Pol] [_{TP} Alfonso is [_{VP} is [_{VP} not coming]]]]]

Holmberg (2016) suggests that the lower position of negation is also responsible for the variation in the answering system of languages like Japanese and Korean. Note that in languages like Korean, the positive answer to a negative question as in (3) is acceptable with the meaning such as 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 between the polarity-based and the truth-based answering of languages. In languages like Korean, the negation is assumed to be within a VP so that it does not affect the Pol value, thus licensing *yes*, *she is not diligent* interpretation.

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:

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

In this example, the negative copula is surely in the higher position combining with the clause of Mimi's being diligent. There is no way

to embed the negation with the predicate *diligent*. This implies that the position of negation is not the key factor in determining the interpretation of affirmative responses.

2.3. More Issues in the Syntax-based Analyses

Note also examples like (30) where particle is used with exophoric antecedent (Tian and Ginzburg 2016):

- (30) (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.

The syntactic analysis that hinges on syntactic reconstruction faces another problem with respect to examples like the following:

- (31) A: Did anyone see Mary?
B: Yes. (=Someone saw Mary)

As pointed out by Sag and Ginzberg (2000), simple syntactic reconstruction would yield the ungrammatical example **Anyone saw Mary*. There is thus an issue of producing a legitimate reconstructed form.

3. A Proposal

3.1. Discourse-based Resolution of Ellipsis

Observing such deficiencies in the syntax-based approaches, 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 in each language.

As for the syntax of the isolated answer particle functioning as

a response to the polar question, following Stainton (1995, 2006) and Ginzburg and Sag (2000), we take the particle as well as other short answers to be a complete, non-sentential constituent:

- (32) A: Is Mimi diligent?
 B: Yes./Maybe./Probably.
 B': No./Never./Probably not.

Expressions like *yes*, *maybe*, *probably*, *sure*, *right*, and so forth, can have stand-alone uses with a complete propositional meaning:

- (33)
- | |
|------|
| S |
| |
| AdvP |
| |
| Adv |
| |
| Yes |

These expressions behave like adverbials, but has a propositional semantic content, constructed from a polar question in the given context.

Syntactically, polar questions are generated by the combination of an inverted auxiliary verb with a non-finite sentence (see Kim and Chaves 2016):

- (34)
- | |
|-----------|
| S |
| / |
| V |
| / |
| NP[nom] |
| / |
| Mimi |
| / |
| AP |
| / |
| diligent? |
- | | |
|-------|---------|
| HEAD | [AUX +] |
| SUBJ | < > |
| COMPS | < [S] > |

Is

In terms of semantics, polar questions are traditionally taken to introduce two propositions, one and the negation of the other (p and $\neg p$). The response particles *yes* and *no* confirm the truth of these two values (Hamblin 1973, Farkas and Bruce 2010, Krifka 2013, among others). This traditional view has been further developed by Ginzburg and Sag (2000), where questions are taken as propositional abstracts. Following this, we also assume polar questions to be 0-ary proposition abstracts in which the set of abstracted elements is the empty set as given in (35a) (Ginzburg and Sag 2000: 110). The semantic content of polar questions can also be represented in terms of feature structures as given in (35b):²

- (35) a. $\lambda\{ \} [\text{diligent}(m)]$
 b. $\left[\begin{array}{l} \text{SEM} \left[\begin{array}{l} \text{question} \\ \text{PARAMS} \{ \} \\ \text{QUANTS} \langle \rangle \\ \text{PROPS} \left[\begin{array}{l} \text{NUCL} [\text{diligent}(m)] \end{array} \right] \end{array} \right] \end{array} \right]$

Polar questions are thus treated uniformly in terms of an empty PARAMS (parameter) value unlike *wh*-questions that include at least one PARAMS value as in *Who is diligent?*. An appropriate response will function as the propositional abstract, yielding the value p or its negation $\neg p$ (e.g., $\{r \mid \text{SimpleAns}(r, \lambda\{ \} p)\} \{p, \neg p\}$). For example, the answer particles *yes* and *no* in (32) each will have the following semantic contents:

² The message or an utterance denotes a proposition, outcome, fact, or question. For example, the content of the sentence *Mimi is diligent* is a proposition whose truth or falsity directly involves the real world. And the content of whether Mimi is diligent is a question which is resolved according to whether the proposition is true or false. By contrast, the meaning of an imperative sentence like *Leave on time!* makes reference to future outcomes involving the hearer's leaving while exclamative sentences like *What a nice hat you have!* denote a fact. See Ginzburg and Sag (2000) for details.

- (36) a. B's semantic content for
- yes*
- :

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

- b. B's semantic content for
- no*
- :

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

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 MAX-QUD (maximal question-under-discussion). The contextual information (CTXT) contains the attribute MAX-QUD, whose value is of type question and represents the question currently under discussion. The meaning of *yes*, as given in (36a), is 'asserting the value $\boxed{}$ which is identical with the propositional meaning of the MAX-QUD, which is constructed from a polar question in the context. That is, the particle *yes* picks up the nucleus of the propositional meaning from the MAX-QUD and asserts it. The particle *no* differs from *yes* in that its semantic content is asserting the negative value of the propositional nucleus meaning that has no quantification information.

3.2. Answering a Negative Question in the Polarity-based System

The analysis for answering a negative question is not different. Consider the following attested examples:

- (37) A: Isn't she clever?

B: Yes. (=She is clever.)

- (38) A: Isn't it enough?

B: No. (=It isn't enough, (I can do more).)

The answer particle *yes* confirms not the negative proposition but the positive proposition, whereas *no* confirms the negative proposition. This in turn means that the answer particle agrees with the polarity of the proposition, as represented in the following:

- (39) a. Yes, she is [affirm] clever.
 b. No, it is not enough.

Note that the negative proposition introduces the quantification information, *not-rel*, scoping over the positive proposition. That is, a negative question is a question whose proposition's semantic content includes a negative state of affairs in its quantification value (QUANTS). The semantic content for *Isn't she clever?* can be represented as the following:

- (40) a.
- $\lambda \{ \} [\neg [\text{clever}(i)]]$

b.

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

Uttering such a negative question in (37) would evoke the MAX-QUD to include a propositional meaning with the quantification information. We have noted 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, leaving out the quantification information. This semantic property is not different when they function as a response to a

negative proposition in that they are anaphoric to the nucleus meaning of the proposition evoked from the question–under–discussion:

- (41) a. semantic content for *yes* in (37):

$$\left[\begin{array}{l} \text{FORM} \langle \text{no} \rangle \\ \text{SYN} [\text{POS adv}] \\ \text{SEM} [\text{ASSERT } \neg [\]] \\ \text{CTXT} \left[\begin{array}{l} \text{MAX-QUD} \left[\begin{array}{l} \text{PARAMS} \{ \ } \\ \text{PROP} \left[\begin{array}{l} \text{QUANTS} \langle \text{not-rel} \rangle \\ \text{NUCL} [\] [\text{enough}(j)] \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right]$$

- b. semantic content for *no* in (38):

$$\left[\begin{array}{l} \text{FORM} \langle \text{yes} \rangle \\ \text{SYN} [\text{POS adv}] \\ \text{SEM} [\text{ASSERT} [\]] \\ \text{CTXT} \left[\begin{array}{l} \text{MAX-QUD} \left[\begin{array}{l} \text{PARAMS} \{ \ } \\ \text{PROP} [\text{NUCL} [\] [\text{clever}(i)]] \end{array} \right] \end{array} \right] \end{array} \right]$$

The particle *yes* in (37) affirms not the negative proposition but just the truth value of the nucleus meaning [*clever(i)*]. Meanwhile, *no* in (38) affirms the negative value of [*enough(j)*], eventually confirming the proposition that it is not enough.

The present system thus offers a uniform analysis for the meaning of answering particles to a positive and negative question. The particle *yes* and *no* always picks up the nucleus meaning of the proposition. It does not refer to the quantification information of sentential negation: the polarity value of the answering particles matches with the meaning of the response proposition. In what follows we will further see that this characterizes the polarity–based system in answering a negative proposition, different from the truth–based system which refers to the quantification information too.

3.3. Answering a Negative Question in the Truth–based System

The SOV language Korean also uses answering particles like *ung* ‘yes’ and *ani* ‘no’ as a response to the polar question (see Kim 2016):

- (42) A: Mimi chakhaci?
 Mimi honest?
 ‘Is Mimi honest?’
 B: Ung. ‘yes’ (=Mimi is honest.)
 B’: Ani. ‘no’ (=Mimi isn’t honest.)

The particle *ung* ‘yes’ straightforwardly affirms the truth of the positive proposition while *ani* ‘no’ disaffirms its truth. Thus, English and Korean are not different in answering positive polar questions.

But a key difference arises from answers to a negative question as in (43), which we repeat here:

- (43) A: Mimi an pwucilenhay?
 Mimi not diligent?
 ‘Isn’t Mimi diligent?’
 B: Ung. ‘yes’ (=Mimi is not diligent.)
 B’: Ani. ‘no’ (=Mimi is diligent.)

Different from English, the affirmative particle *ung* ‘yes’ confirms the negative proposition, not the positive proposition. That is, in the Korean system the answer to a negative question confirms or disconfirms the truth of the negative proposition, one key property of the truth–based system.

As shown earlier, Holmberg attributes this language difference in answering a negative question to the position of negation in syntactic structures. Departing from this syntax–based account, we suggest that the parametric difference is due to the lexical properties of answering particles, not due to the position of negation in syntax. The key claim is that in the truth–valued system, answering particles

refer to the propositional meaning including the QUANT information. The answering particle *ung* ‘yes’ and *ani* ‘no’ will thus have the following information:

(44) a. Semantic content of *ung* ‘yes’ in (43):

FORM	⟨ung⟩
SYN	[POS adv]
SEM	[ASSERT 2]
CTXT	[MAX-QUD [PARAMS{ }] [PROP 2] [QUANT ⟨not-rel⟩ [NUCL [diligent(m)]]]]]

b. Semantic content of *ani* ‘no’ in (43):

FORM	⟨ani⟩ ‘no’
SYN	[POS adv]
SEM	[ASSERT -2]
CTXT	[MAX-QUD [PARAMS{ }] [PROP 2] [QUANT ⟨(not-rel)⟩ [NUCL [diligent(m)]]]]]

Note the difference from English. The answering particle *ung* ‘yes’ to the negative question 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’.

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

This means a double negation interpretation, yielding a heavy processing load (Roelofsen and Farkas 2015).

3.4. Negative Neutralization and Language Variations

The present system offers a natural account for neutralization examples in English, whose data we repeat here (Kramer and Rawlins 2011):

- (46) A: Is Alfonso not coming to the party?
B: Yes. (=he isn’t coming.)
B’: No. (=he isn’t coming.)

The answering particle *yes* here does not confirm the truth of the positive proposition but affirms the negative proposition. This is what we expect from the truth-based system in languages like Korean, Cantonese, and Japanese, not from the polarity-based system in languages like English and Swedish.

As we have observed, the account for such an example makes the difference between Kramer and Rawlins (2011) and Holmberg (2013, 2016). Unlike Kramer and Rawlins (2011), Holmberg’s account attributes this property to the position of negation: the negation in (46) is in a lower syntactic position (adjoined to vP), evidenced from examples like *Luckily, John hasn’t not done his homework*. This syntactic assumption allows *yes* to form an operator–variable structure with the *affirmative* Pol head in his system:

(47) [_{RP} yes [_{Aff}] [_{RP} Alfonso Pol[_{Aff}] [_{TP} Alfonso is [_{vP} not [_{vP} coming to the party]]]]]

The observation that the negation here is a constituent negation positioning in a lower VP implies that the quantification of negation is not encoded in the QUANT information in our system. The particle *yes* then affirms the nucleus information such that Mimi is not diligent, as given in the following:

- (48)
$$\left[\begin{array}{l} \text{FORM}(\text{yes}) \\ \text{SYN} \left[\text{POS adv} \right] \\ \text{SEM} \left[\text{ASSERT } \boxed{} \right] \\ \text{CTXT} \left[\text{MAX-QUD} \left[\text{PROP} \left[\text{QUANT}() \right. \right. \right. \\ \left. \left. \left. \text{NUCL } \boxed{} \text{not-coming}(a) \right] \right] \right] \right] \end{array} \right]$$

Our analysis thus offers a clean account for negative neutralization examples: the only thing we follow is the scope of negation. What this also implies is that when a speaker takes the negation in such examples to scope over the sentence, the answer yes would affirm the positive proposition, as evidenced from some of the speakers Holmberg consulted.

3.5. Other Implications

Kramer and Rawlins's (2011) analysis posits the syntactic identity in clausal ellipsis, raising an issue of identity condition. Consider polar questions including an indefinite pronoun:

- (49) A: Is anybody out there?
B: Yes.

- (50) A: Is anyone harmed by these actions?
B: No.

The syntax-identity condition would run into an issue here in reconstructing the source since it would mean to have unacceptable sources:

- (51) [Yes. ~~{Anybody is out there}~~]

However, the present analysis offers a clean account. In the present system, the QUD information in (49) is if there is any individual out there. The positive answer *yes* then affirms the nucleus

information that there is an individual who is out there:

- (52)
$$\left[\begin{array}{l} \text{FORM}(\text{yes}) \\ \text{SYN} \left[\text{POS adv} \right] \\ \text{SEM} \left[\text{ASSERT } \boxed{} \right] \\ \text{CTXT} \left[\text{MAX-QUD} \left[\text{PROP} \left[\text{QUANT}() \right. \right. \right. \\ \left. \left. \left. \text{NUCL } \boxed{} \text{out-there}(x) \right] \right] \right] \right] \end{array} \right]$$

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 (53).

- (53) (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. However, in our semantic/pragmatic-based system, the negative particle can mean that the speaker does affirm the negative value of the proposition such that the child touches the socket.

- (54)
$$\left[\begin{array}{l} \text{FORM}(\text{no}) \\ \text{SYN} \left[\text{POS adv} \right] \\ \text{SEM} \left[\text{ASSERT } \neg \boxed{} \right] \\ \text{CTXT} \left[\text{MAX-QUD} \left[\text{PROP} \left[\text{QUANT}() \right. \right. \right. \\ \left. \left. \left. \text{NUCL } \boxed{} \text{touch}(c,s) \right] \right] \right] \right] \end{array} \right]$$

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

- (55) A: tap molu-ci anh-ci?
 answer not.know-CONN not-Q
 'Don't you not know the answer?'
 B: Ung.'yes'(= I don't not 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. Given that the according to Holmberg's analysis, truth-based system places the negation in the lower vP position, it would be hard to obtain the effect of double negation reading. However, our system offers a straightforward account for this:

- (56)
$$\left[\begin{array}{l} \text{FORM}(\text{ung}) \\ \text{SYN} \left[\begin{array}{l} \text{POS adv} \\ \text{SEM} \left[\begin{array}{l} \text{ASSERT} \boxed{1} \end{array} \right] \\ \text{CTXT} \left[\begin{array}{l} \text{MAX-QUD} \left[\begin{array}{l} \text{PROP} \boxed{1} \left[\begin{array}{l} \text{QUANT}(\text{not-rel}) \\ \text{NUCL} [\text{not.know}(i,a)] \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right]$$

The positive answer particle *ung* simply agrees the proposition including the negation quantification. This gives the effect of double negation, meaning the speaker knows the answer.

4. Conclusion

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 whether the propositional anaphoric expressions refer to the propositional meaning including the negative quantification or to its nucleus

meaning minus the quantification meaning. The former is the truth-based system (e.g., Korean) whereas the latter is the polarity-based system (e.g., English). This system also interacts with the property of negation for variations like negative neutralization examples. Thus what matters in polarity answers is the 'anaphoric potential' of the polarity particle and the 'polarity sensitivity' of the question-under-discussion. This direction is simpler syntax for language learners than the syntax-based ones.

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