NEGATIVE POLAR QUESTIONS AND ANSWERS IN ENGLISH AND KOREAN

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The aims of the current study

i) clarify the syntactic and semantic structure of NPQs and the meaning of answers to them,

ii) compare how native English and Korean speakers interpret NPQs in L1 and L2, and

iii) reveal the universal ambiguity of NPQs in both languages.

CONTENTS

CHAPTER 1.
INHERENT AMBIGUITY OF NPQS

Introduction

- In natural language conversation, to elicit information currently lacked, various forms of polar questions (PQs) are used depending on speakers' intentions and conversational context. Yet, interlocutors are generally able to understand the semantic and pragmatic import of PQs and to answer them without undue misunderstanding.
- Sometimes, an addressee does not fully understand the intention or meaning of a question, leading in those instances to unexpected responses (or wrong responses).

Positive polar question (PPQ)

- The meaning of positive polar questions (PPQs) is relatively straightforward. Thus, the truth conditions of PPQs can be decided easily.

(2) Q: Did he eat lunch?

A1: Yes. (‘He ate lunch.’)

No. (‘He didn’t eat lunch.’)

A2: ~~Yes. (‘He didn’t eat lunch.’)~~

~~No. (‘He ate lunch.’)~~

Negative polar question (NPQ)

- In contrast to PPQs, the meaning of NPQs may vary, and simple *yes-no* answers to NPQs have seemingly unpredictable interpretations (Claus et al. 2017, Holmberg 2013, Kim 2017, Krifka 2017, Kramer & Rawlins 2011, Ladd 1981, Sudo 2013).

(3) Q: Did**n't** he eat lunch?

A: Yes. (??'He ate lunch.' or ??'He didn't eat lunch.')

No. (??'He didn't eat lunch.' or ??'He ate lunch.')

Traditional answering typology

- The answering pattern to NPQs has proposed dividing languages typologically as being "*polarity-based*" and "*truth-based*" on the strength of how *yes-no* answers to NPQs are most typically interpreted in those languages (Pope 1976; Jones 1999; Kramer & Rawlins 2011; Holmberg 2013).
- Polarity-based languages: English, French, Swedish, etc.
- Truth-based languages: Korean, Chinese, Japanese, etc.

Traditional answering typology

- Polarity-based languages; English, French, Swedish, etc.

(4) Q: Are**n't** you hungry?

A: Yes, (I am hungry). / No, (I am not hungry).

Traditional answering typology

- Polarity-based languages; English, French, Swedish, etc.

(4) Q: Are**n't** you hungry?
A: Yes, (I am hungry). / No, (I am not hungry).

- Truth-based languages; Korean, Chinese, Japanese, etc.

(5) Q: pay **an** kop-ni?
red NEG be.hungry-Q
'Aren't you hungry?'
A: ung, (pay an kopha). / ani, (pay kopha).
yes stomach NEG be.hungry / no stomach be.hungry
'Yes, I am not hungry.' / 'No, I am hungry.'

Traditional answering typology

- The typological distinction between the two classes of languages to be merely an apparent one, and languages actually show both answering patterns depending on the structure of NPQs in diverse conversational contexts.
- Nevertheless, each tends to have a fairly strong preference of one answering pattern over the other one.
- It is assumed that, rather than being attributable to any “typological” difference, the contrary interpretive tendencies of certain languages with respect to NPQs is attributable to
  - the relative frequency of certain NPQ constructions, and
  - the tendency of some of these to be more or less ambiguous

CHAPTER 2.
THE STRUCTURE OF NEGATION IN ENGLISH AND KOREAN

Structure of negation in English

- Generally, negation is classified into two categories, *sentence* and *constituent* negation by Klima (1964), *nexal* and *special* negation by Jeffersen (1917), in accordance with the scope of negation.
- Regarding the distribution of English sentential negation, Holmberg (2013) presents the categories of *highest*, *middle*, or *low* negation based on the position of negation.

Structure of negation in English

- The interpretation accorded to **high-negation** involves a negative morpheme well outside of vP/VP which may undergo contraction, as in (6). Note that the negator **not** appears in each case to the left of an adverb (*always*, *now*, and *previously*).

(6) a. She will **not** *always* eat lunch. / She wo**n't** *always* eat lunch.

b. She is **not** *now* eating lunch. / She is**n't** *now* eating lunch.

c. She has **not** *previously* eaten lunch. / She has**n't** *previously* eaten lunch.

Structure of negation in English

- In contrast, **low-negation** remains within the scope of vP/VP and does not move, as in (7). Here, the negator **not** appears in each case to the right of the adverb (*always*, *now*, and *previously*).

(7) a. She will *always* **not** eat lunch.

b. She is *now* **not** eating lunch.

c. She has *previously* **not** eaten lunch.

Structure of negation in English

- In Mainstream American English (MAE), the multiply used negations invert the original negation, and it converts the negative meaning to the positive one.

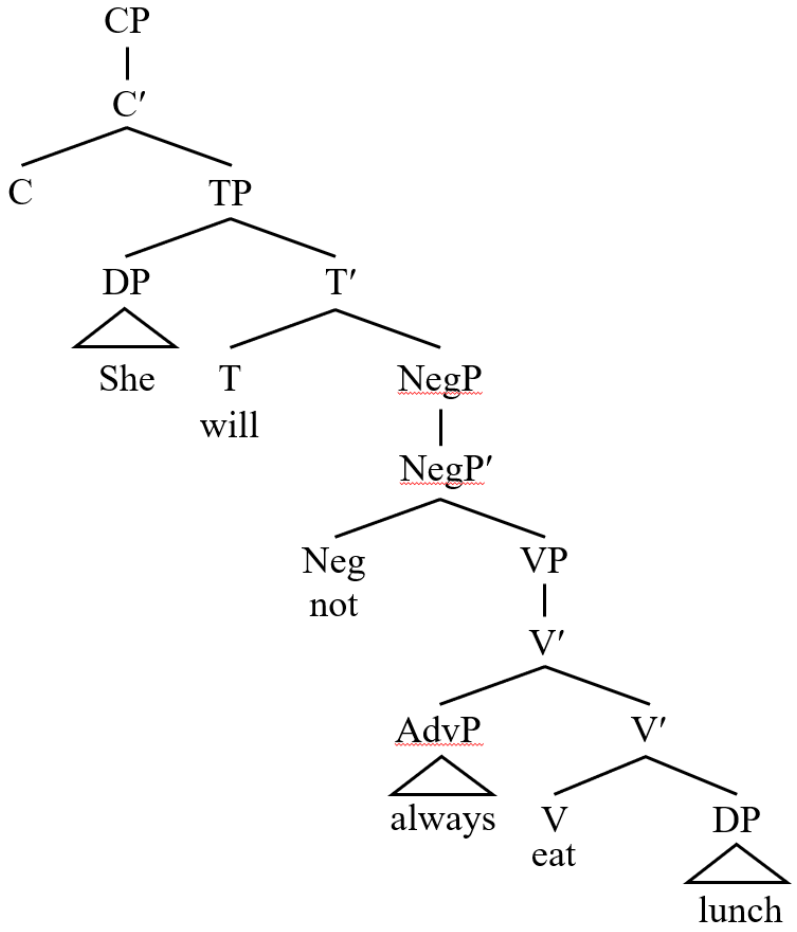
(8) a. She wo**n't** *always* **not** eat lunch.

b. She is**n't** *now* **not** eating lunch.

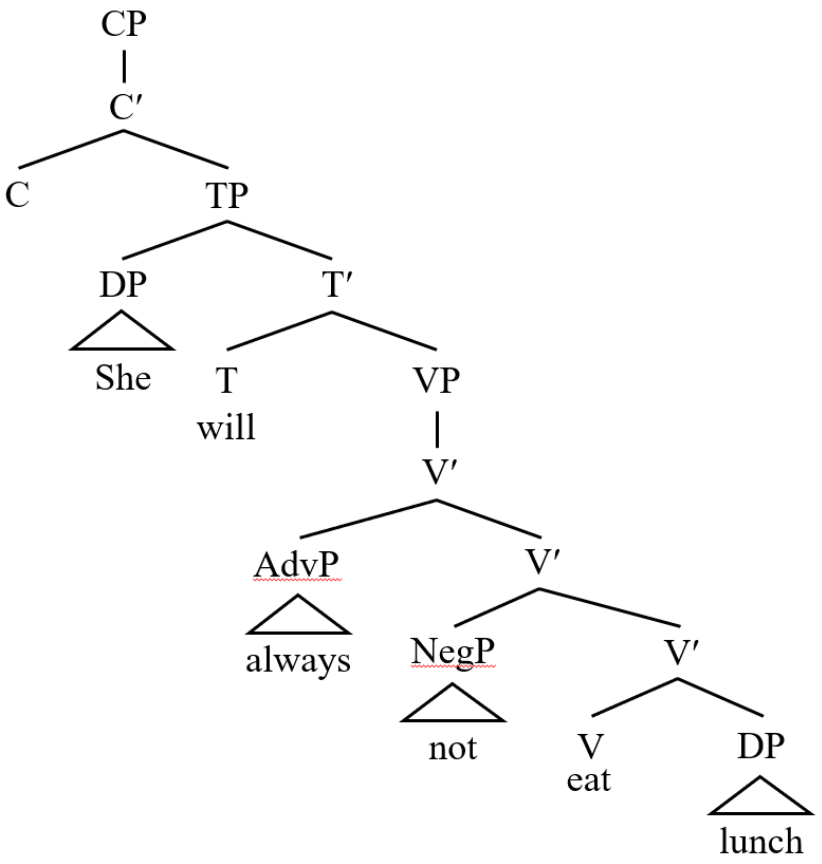
c. She has**n't** *previously* **not** eaten lunch.

Structure of negation in English

(6a′)



(7a′)



Structure of negation in Korean

- Korean also has two positions into which a negator ***an*** 'not' can be inserted, namely *Long-Form-negation* (LFN) and *Short-Form Negation* (SFN) (Cho 1994; Hagstrom 2000; Han et al. 2007; Kim & Park 2000; Sells 2001; Sohn 1999, and more).
- Based on the position of the negator in relation to the main verb, LFN and SFN are also called as *post-verbal* and *pre-verbal* negation (Cho 1975; Yoon 1990).

Structure of negation in Korean

- In (9) with LFN, the main verb *mek* ‘eat’ is nominalized with the postpositional affix -*ci*, and the negator ***an*** is prefixed to the auxiliary do-verb ***ha*** (reduced to h in the above example for some phonological purpose) composing a negative auxiliary complex ***anh***-*ass*-*ta* with a tense marker -*ass*- and a declarative mood marker -*ta* at the end of the clause.

(9)	kunye-ka	cemsim-ul	mek-ci	**anh**-ass-ta.	(LFN)
	she-NOM	lunch-ACC	eat-NMLZ	NEG.do-PST-DECL	
	‘She didn’t eat lunch.’				

Structure of negation in Korean

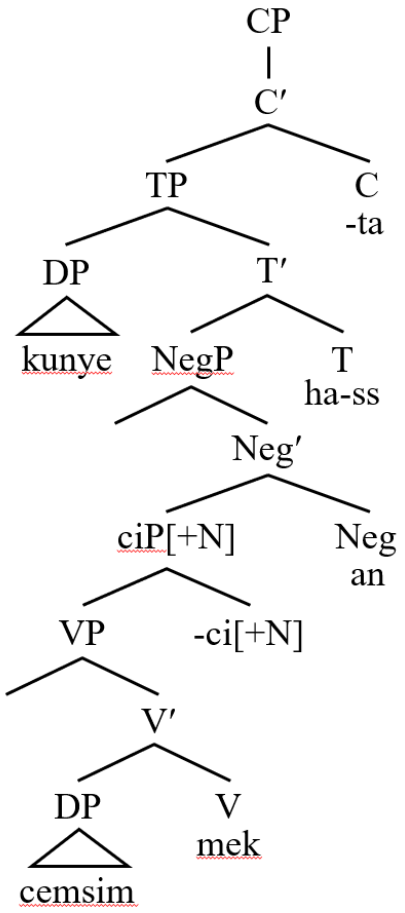
- In (10) with SFN, ***an*** is directly prefixed to the lexical verb *mek* ‘eat’ (or perhaps to the lowest VP, underlyingly).

(10) kunye-ka cemsim-ul **an** mek-ess-ta. (SFN)
she-NOM lunch-ACC NEG eat-PST-DECL
‘She didn’t eat lunch.’

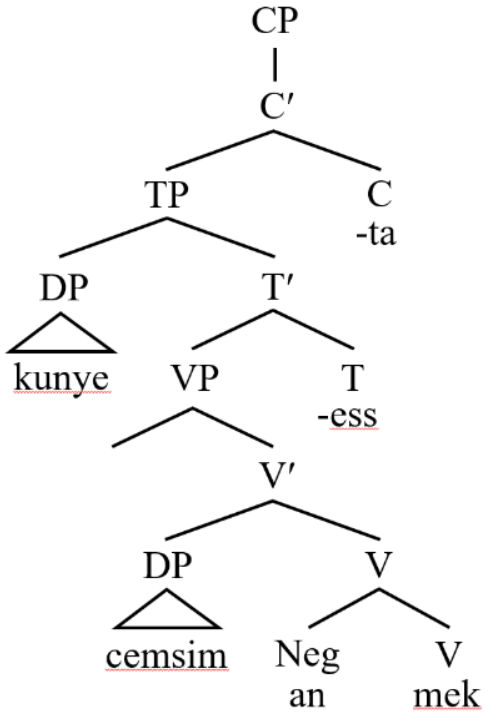
- Because of the structure difference between LFN and SFN constructions, the negations may show distinct scope relations in Korean negative sentences.

Structure of negation in Korean

(9′)



(10′)



Structure of negation in Korean

- Since ***an*** occupies structurally distinct positions in SFN and LFN constructions, two negations can appear in both positions simultaneously. Korean double negation constructions, when used as in example (11), have the same positive meaning as they would in SAE.

(11) kunye-ka cemsim-ul **an** mek-ci **an**h-ass-ta. (Double negation)

she-NOM lunch-ACC NEG eat-NMLZ NEG.do-PST-DECL

'She did not not eat lunch.' = 'She ate lunch.'

Scope relations in English negative constructions

- English negation blocks the raising of quantified nominals that it commands. Consequently, for example, where (12a) is ambiguous, (12b) is not, only allowing ∃>∀ reading.

(12) a. Someone answered every question. some>every; every>some

b. Someone did**n't** answer every question. some>every; ~~every>some~~

Scope relations in Korean negative constructions

(13) (Acik) motun haksayng-i ku mwuncey-lul phwul-ci **an**h-ass-ta.
yet every student-NOM the question-ACC answer-NMLZ NEG.do-PST-DECL
∀subj>neg; neg>∀subj

(14) (Acik) Hana-ka motun mwuncey-lul phwul-ci **an**h-ass-ta.
Yet hana-NOM every question-ACC answer-NMLZ NEG.do-PST-DECL
∀obj>neg; neg>∀obj

(15) (Acik) motun haksayng-i ku mwuncey-lul **an** phwul-ess-ta.
Yet every student-NOM the question-ACC NEG answer-PST-DECL
∀subj>neg; ??neg>∀subj

(16) (Acik) Hana-ka motun mwuncey-lul **an** phwul-ess-ta.
Yet hana-NOM every question-ACC NEG answer-PST-DECL
∀obj>neg; ??neg>∀obj

Scope relations in Korean negative constructions

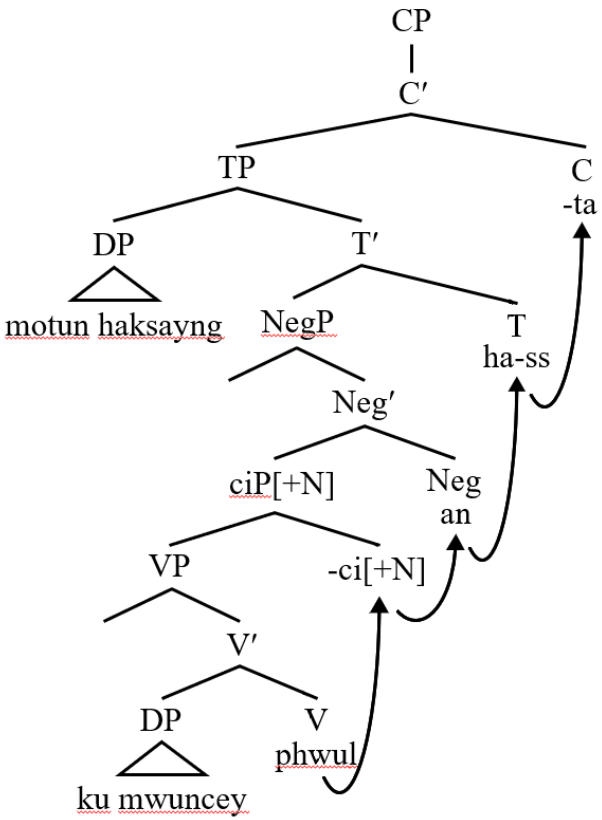
(13′)	(Acik)	han haksayng-i	ku mwuncey-lul	phwul-ci	**an**h-ass-ta.
	yet	one student-NOM	the question-ACC	answer-NMLZ	NEG.do-PST-DECL
					∃subj>neg; neg>∃subj
(14′)	(Acik)	Hana-ka	han mwuncey-lul	phwul-ci	**an**h-ass-ta.
	Yet	hana-NOM	one question-ACC	answer-NMLZ	NEG.do-PST-DECL
					∃obj>neg; neg>∃obj
(15′)	(Acik)	han haksayng-i	ku mwuncey-lul	**an**	phwul-ess-ta.
	Yet	one student-NOM	the question-ACC	NEG	answer-PST-DECL
					∃subj>neg; ??neg>∃subj
(16′)	(Acik)	Hana-ka	han mwuncey-lul	**an**	phwul-ess-ta.
	Yet	hana-NOM	one question-ACC	NEG	answer-PST-DECL
					∃obj>neg; ??neg>∃obj

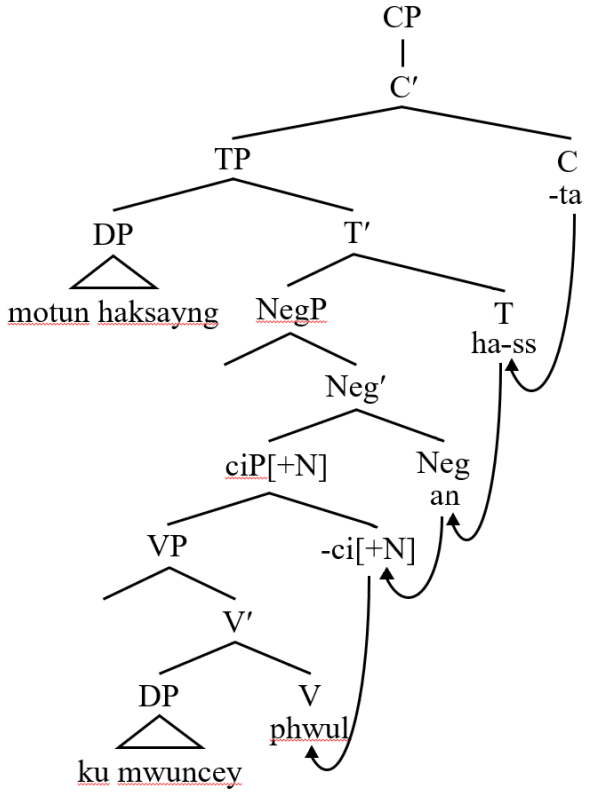
Scope relations in Korean negative constructions

- What I found in the data above is that relative scope of quantified NPs and negation in Korean is quite different from that in English.
- In English, the relative scope of a quantified NP and negation is determined by the position of the quantified NP and negation.
- However, there are no perceptible differences in the scope possibilities that depend on the type of the quantified NP in Korean.
- In LFN constructions, scope is more ambiguous, and the quantified NP can be interpreted as having scope below or over negation.

Scope relations in Korean negative constructions

- Raising and lowering movements in LFN constructions (Han et al. 2007)





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Scope relations in Korean negative constructions

- I do find there to be a reliable difference between the scope interpretations available in LFN constructions and scope interpretations available in SFN constructions, with the latter being somewhat more restricted (again, with no regard for grammatical function or quantifier type).
- It should be noted that relative scope of quantified NPs and negation in LFN and SFN constructions is rather controversial, but only with respect to interpretations in which negation is purported to have wide scope (Baek 1998, Choi 1999, Hagstrom 2000, Han et al. 2007, J-B Kim 2000a, H-J Kim 2007, Suh 1989).

Scope relations in Korean negative constructions

- Possibility of negative scope over universally quantified NPs in Korean **LFN constructions**

	over quantified subjects	over quantified objects
	NEG > Every	NEG > Every
Suh (1989)	*	√
Baek (1998)	√	√
Choi (1999)	√	√
J-B Kim (2000)	√	√
Hagstrom (2000)	√	√
Han et al. (2007)	*	√
H-J Kim (2007)	√	√
This paper	√	√

Scope relations in Korean negative constructions

- Possibility of negative scope over universally quantified NPs in Korean **SFN constructions**

	over quantified subjects	over quantified objects
	NEG > Every	NEG > Every
Suh (1989)	*	*
Baek (1998)	√	√
Choi (1999)	√	√
J-B Kim (2000)	√	√
Hagstrom (2000)	*	*
Han et al. (2007)	*	√
H-J Kim (2007)	*	*
This paper	??	??

CHAPTER 3.
THE SYNTAX AND SEMANTICS OF NPQS AND ANSWERS IN ENGLISH AND KOREAN

Overview

- Having discussed how the position of negation affects scope interpretations, I can now apply this understanding to the structure of NPQs and following answers.
- In order to solve the puzzle of NPQ interpretations, I newly introduce two distinct negations, *Proposition Internal Negation* (PIN) and *Proposition External Negation* (PEN).
- I additionally note that NPQs are far more susceptible to pragmatically induced interpretations when they are not proposition-negating.

Traditional answering typology

- Polarity-based languages; English, French, Swedish, etc.

(17) Q: Are**n't** you hungry?
A: Yes, (I am hungry). / No, (I am not hungry).

- Truth-based languages; Korean, Chinese, Japanese, etc.

(18) Q: pay **an** kop-ni?
red NEG be.hungry-Q
'Aren't you hungry?'
A: ung, (pay an kopha). / ani, (pay kopha).
yes stomach NEG be.hungry / no stomach be.hungry
'Yes, I am not hungry.' / 'No, I am hungry.'

Kramer & Rawlins (2010)

- Kramer and Rawlins (henceforth, K&R) (2010) introduce the meaning of short *yes-no* answers and report anticipated ambiguity caused by ellipsis in short answers.
- In their ellipsis account, simple *yes-no* answers are considered to be "fragment" answers that following phrases copied from the asked question are elided.

(19) Q: Is Alfonso coming to the party?

A: Yes, (~~he is coming to the party~~).

No, (~~he isn't coming to the party~~).

Kramer & Rawlins (2010)

- More importantly, they point out that the meaning of positive and negative answers can be collapsed as in (20).
- According to K&R, (20) should involve *negative neutralization*, wherein simple *yes* and *no* answers would each have an identical negative interpretation.

(20) Q: Is Alfonso **not** coming to the party?

A: Yes. (= he isn't coming)

No. (= he isn't coming)

Holmberg (2013)

- Holmberg (2013) discerns three structurally distinct classes of negation: HIGHEST, MIDDLE, or LOW.
- **HIGHEST** negation involves **n't** being interpreted outside IP. In contrast, **LOW** negation involves the negator **not** which has scope over vP/VP. In the case of **MIDDLE** negation, the negator **not** (and for some English speakers, also **n't**) is interpreted "IP-internally, but with sentential scope."

Holmberg (2013)

(21) Q: Does**n't** he *sometimes* show up for work? (HIGHEST)

A: Yes. ('He sometimes does show up for work.')

No. ('He sometimes does not show up for work.')

(22) Q: Does he *sometimes* **not** show up for work? (LOW)

A: Yes. ('He sometimes does not show up for work.')

No. ('He does not sometimes not show up for work.' – i.e., He always does show up.)

Holmberg (2013)

- Holmberg's MIDDLE negation in *yes-no* questions can be structurally ambiguous since it can appear and be interpreted as inside IP, but can have outside (i.e., sentential) scope.
- Then, what happens in *negative neutralization*?

(23) Q: Is he **not** coming to the party?

A: Yes. ('He isn't coming.')

No. ('He isn't coming.')

Holmberg (2013)

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- Then, what happens in *negative neutralization*?

(23) Q: Is he **not** coming to the party?

A: Yes. ('He isn't coming.') ◀ An answer to LOW negation

No. ('He isn't coming.') ◀ An answer to HIGHEST negation

Holmberg (2013)

- Holmberg's MIDDLE negation in *yes-no* questions can be structurally ambiguous since it can appear and be interpreted as inside IP, but can have outside (i.e., sentential) scope.
- Then, what happens in *negative neutralization*?

(23) Q: Is he **not** coming to the party?

A: Yes. ('He isn't coming.') ◀ An answer to LOW negation

No. ('He isn't coming.') ◀ An answer to HIGHEST negation

A: Yes. ('He is coming.') ◀ An answer to HIGHEST negation

No. ('He is coming.') ◀ An answer to LOW negation

Two distinct NPQs (English)

- Differently from the traditional typology, the interpretation of NPQs is decided by the structure of NPQs.
- English and Korean have both polarity-based and truth-based NPQs.
- High-negation NPQs in English

(24) Q: Did**n't** you [VP see him]?

A: Yes, (I saw him). / No, (I didn't see him).

- Low-negation NPQs in English

(25) Q: Did you (really) [VP **not** see him]?

A: Yes, (I didn't see him). / No, (I saw him).

Two distinct NPQs (Korean)

- High-negation NPQs in Korean

(26)Q: ne-nun [VP ku-lul po-ci] **anh**-ass-ni? (Long-form negation)
you-NOM him-ACC see-NMLZ NEG.do-PST-Q
'Didn't you see him?'
A: ung, po-ass-e. / ani, an po-ass-e.
yes see-PST-DECL no NEG see-PST-DECL

- Low-negation NPQs in Korean

(27)Q: ne-nun [VP ku-lul **an** po-ass-ni]? (Short-form negation)
you-NOM him-ACC NEG see-PST-Q
'Did you not see him?'
A: ung, an po-ass-e. / ani, po-ass-e.
yes NEG see-PST-DECL no see-PST-DECL

The semantics of PQs and answers

- According to Hamblin (1976) and Karttunen (1977), semantic approaches to the denotation of PQs have presented formalisms wherein a question denotes the set of possible answers to it.
- Every *yes-no* question denotes a set of propositions which contains both a positive and a negative proposition.
- A PPQ such as (28) denotes a set of propositions (i.e. {*p*, ¬*p*}) that are possible (or 'true') answers to it.

(28) ⟦ Did you eat lunch? ⟧

(29) {λw [I ate lunch in w], λw [I did not eat lunch in w]}

The semantics of PQs and answers

- Hamblin (1976) and Karttunen (1977) do not actually distinguish the semantics of positive and negative *yes-no* questions, seeming to propose a semantics involving a disjunctive set of propositions for all PQs.
- I strongly posit that NPQs with low-negation and high-negation will be interpreted differently, in that low-negation directly interacts with the truth of the propositions denoted by the NPQ and that high-negation does not.

The semantics of PQs and answers

- Semantics of low-negation NPQs

(30) ⟦ Did you *really* **not** eat lunch? ⟧

(31) {λw [I really did not eat lunch in w], λw [I did not really not eat lunch in w]}

- Semantics of high-negation NPQs

(32) ⟦ Did**n't** you eat lunch? ⟧

(33) {λw [I ate lunch in w], λw [I did not eat lunch in w]}

Proposition Internal Negation (PIN) vs. Proposition External Negation (PEN)

- Holmberg's 3-way (HIGHEST, MIDDLE, and LOW) analysis of negation is mainly based on the surface structure of NPQs.
- That said, the likely interpretations of NPQs are greatly affected by the position of the negator in the structure, but they are not always matched.

Proposition Internal Negation (PIN) vs. Proposition External Negation (PEN)

- Holmberg's 3-way (HIGHEST, MIDDLE, and LOW) analysis of negation is mainly based on the surface structure of NPQs.
- That said, the likely interpretations of NPQs are greatly affected by the position of the negator in the structure, but they are not always matched.
- To help to understand the puzzle of answers to NPQs, I clarify the general property of two distinct patterns. In cases where the negative morpheme actually negates the proposition denoted in the question, I call it ***Proposition Internal Negation*** (PIN), where the negative morpheme does not affect the truth of the proposition, I call it ***Proposition External Negation*** (PEN).

Proposition Internal Negation (PIN) vs. Proposition External Negation (PEN)

- Question-answer patterns for PPQ, PIN-NPQ, and PEN-NPQ

	What is asked?	What does yes mean?	What does no mean?
I. PPQ	Is *p* true?	The *p* is true.	The *p* is false.
I. PIN-NPQ			
I. PEN-NPQ			

Proposition Internal Negation (PIN) vs. Proposition External Negation (PEN)

- Question-answer patterns for PPQ, PIN-NPQ, and PEN-NPQ

	What is asked?	What does yes mean?	What does no mean?
I. PPQ	Is *p* true?	The *p* is true.	The *p* is false.
I. PIN-NPQ	Is ¬*p* true?	The ¬*p* is true.	The ¬*p* is false. (=The p is true.)
I. PEN-NPQ			

Proposition Internal Negation (PIN) vs. Proposition External Negation (PEN)

- Question-answer patterns for PPQ, PIN-NPQ, and PEN-NPQ

	What is asked?	What does yes mean?	What does no mean?
I. PPQ	Is *p* true?	The *p* is true.	The *p* is false.
I. PIN-NPQ	Is ¬*p* true?	The ¬*p* is true.	The ¬*p* is false. (=The p is true.)
I. PEN-NPQ	Is *p* true?	The *p* is true.	The *p* is false.

Proposition Internal Negation (PIN) vs. Proposition External Negation (PEN)

(34) Q: Did Hana **not** eat lunch today? (PIN or PEN?)

Proposition Internal Negation (PIN) vs. Proposition External Negation (PEN)

(34) Q: Did Hana **not** eat lunch today? (PIN or PEN?)

A1: Yes. = 'She ate lunch.' (PEN-NPQ)

No. = 'She did not eat lunch.' (PEN-NPQ)

A2: Yes. = 'She didn't eat lunch.' (PIN-NPQ)

No. = 'She ate lunch.' (PIN-NPQ)

Proposition Internal Negation (PIN) vs. Proposition External Negation (PEN)

(35) Q: Did**n't** Hana eat lunch today? (PIN or PEN?)

A1: Yes. = 'She did eat lunch.' (PEN-NPQ)

No. = 'She did not eat lunch.' (PEN-NPQ)

A2: Yes. = 'She didn't eat lunch.' (PIN-NPQ)

No. = 'She did eat lunch.' (PIN-NPQ)

Proposition Internal Negation (PIN) vs. Proposition External Negation (PEN)

(36) Q: Hana-ka cemsim-ul **an** mek-ess-ni? (PIN or PEN?)
Hana-NOM lunch-ACC NEG eat-PST-Q
'Did Hana not eat lunch?'

(37) Q: Hana-ka cemsim-ul mek-ci **an**h-ass-ni? (PIN or PEN?)
Hana-NOM lunch-ACC eat-NMLZ NEG.do-PST-Q
'Didn't Hana eat lunch?'

A1: Ung. = 'She did eat lunch.' / Ani. = 'She did not eat lunch.' (PEN)
yes no

A2: Ung. = 'She did not eat lunch.' / Ani. = 'She did eat lunch.' (PIN)
yes no

The pragmatics of NPQs

- It needs be acknowledged that NPQs, with a negation that is often not proposition-negating, are far more susceptible to pragmatically induced interpretations.
- Ladd (1981) first distinguished *inner* and *outer* negation as being sensitive to questioner bias.
- Negation can be inside or outside the proposition it is attached to, depending on speakers' beliefs or biases.

The pragmatics of NPQs; Ladd 1981

(38) [Situation: Kathleen and Jeff have just come from Chicago on the Greyhound bus to visit Bob in Ithaca.]

Bob: You guys must be starving. You want to get something to eat?

PEN-NPQ Kathleen: Yeah, **isn't there a vegetarian restaurant around here?** - Moosewood, or something like that?

Bob: Gee, you've heard of Moosewood all the way out in Chicago, huh? OK, let's go there.

The pragmatics of NPQs; Ladd 1981

(39) [Situation: Bob is visiting Kathleen and Jeff in Chicago while attending the CLS.]

Bob: I'd like to take you guys out to dinner while I'm here - we'd have time to go somewhere around here before the evening session tonight, don't you think?

Kathleen: I guess, but there's not really any place to go to in Hyde Park.

PIN-NPQ Bob: Oh, really, **isn't there a vegetarian restaurant around here?**

Kathleen: No, about all we can get is hamburgers and souvlaki.

The pragmatics of NPQs; Ladd 1981

- Moreover, polarity items such as *either* and *too* serve to disambiguate the possible scope of negation. Thus, the two NPQs in (44) can be seen to pose semantically/pragmatically distinct questions.

(40) a. Is**n't** Jane coming, **too/also**? **PEN-NPQ**

b. Is**n't** Jane coming, **either**? **PIN-NPQ**

CHAPTER 4.
L1 INTERPRETATION OF POLAR QUESTIONS

Overview

- This chapter explores the syntax and semantics of NPQs by analyzing L1 English and L1 Korean speakers' responses to PQs in linguistically decontextualized conditions.
- L1 speakers might interpret ambiguous NPQs based on the NPQ's intrinsic syntactic structure and semantic denotation.
- In designing any experiment to assess the interpretation of NPQs, it is nearly impossible to completely and accurately control for: (i) speaker-hearer beliefs and expectations, (ii) textual ambiguity or vagueness, and (iii) individual speaker preferences and variation.

Methodology

- Three concepts influencing the interpretation of NPQs: Contextual evidence (CE), speaker beliefs (SB), and hearer expectations (HE) (Roelofsen et al. (2012))
- Textual contexts can often be vague or ambiguous (evoking unanticipated conversational implicatures) and NPQ experimental stimuli are themselves sometimes structurally ambiguous.
- Then, how to control speaker belief (SB) and hearer expectations (HE)?
- The current online experiment presents participants with ontologically based (rather than linguistically constructed) CE, so we can be more certain of participants' beliefs.

Methodology

- Specific research questions that the present experiment is designed to address are:
  - Q1. How are NPQs interpreted in linguistically decontextualized conditions?
  - Q2. Does the interpretation of NPQs correlate with the position of negation in the clause and align with the PIN-PEN dichotomy?
  - Q3. Are there language-particular differences in native-speaker interpretation of two distinct NPQ structures?

Methodology

- Three online experiments tested English and Korean L1 speakers' interpretations of NPQs.
  - 45 English speakers in Columbia, South Carolina
  - 33 Korean speakers in Daegu, South Korea
- The experiments manipulated:
  - Experiment 1
    - 24 positive polarity questions (PPQs) vs. 24 High-negation NPQs (High-NPQs)
  - Experiment 2
    - 24 PPQs vs. 24 Low-negation NPQs (Low-NPQs)
  - Experiment 3
    - 24 PPQs vs. 24 High-NPQs vs. 24 Low-NPQs

Methodology

- Experimental questions

(41) a. Did you see a red circle? (PPQ)

b. Didn’t you see a red circle? (High-NPQ)

c. Did you really **not** see a red circle? (Low-NPQ)

- Filler questions

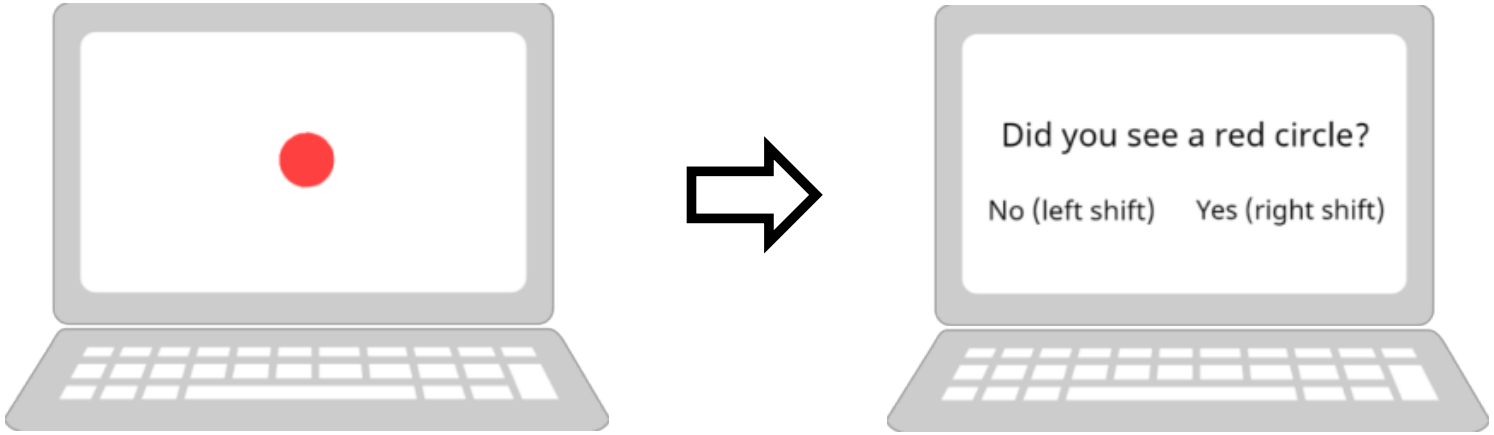
(42) a. What color was the symbol you saw?

b. What shape was the symbol you saw?

c. You saw a red circle, didn’t you?

Methodology

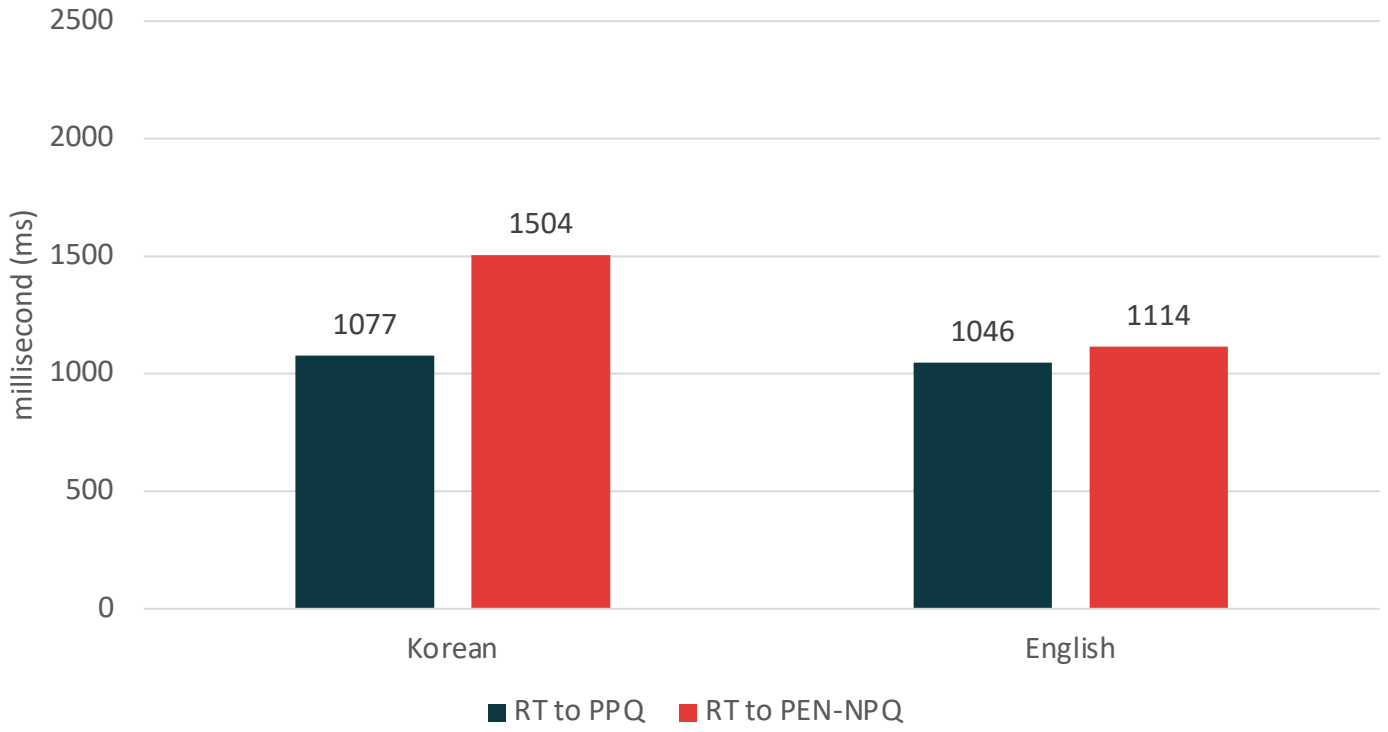
- Participants were presented with two slides: a slide displaying a symbol having a particular shape and color, and then a slide displaying a written question with two answer choices.
- Response time (RT) and Unexpected response (UER) were recorded.



Symbol prompt slide (1000ms)

Q/A slide (5000ms)

Response time (RT) in Exp 1

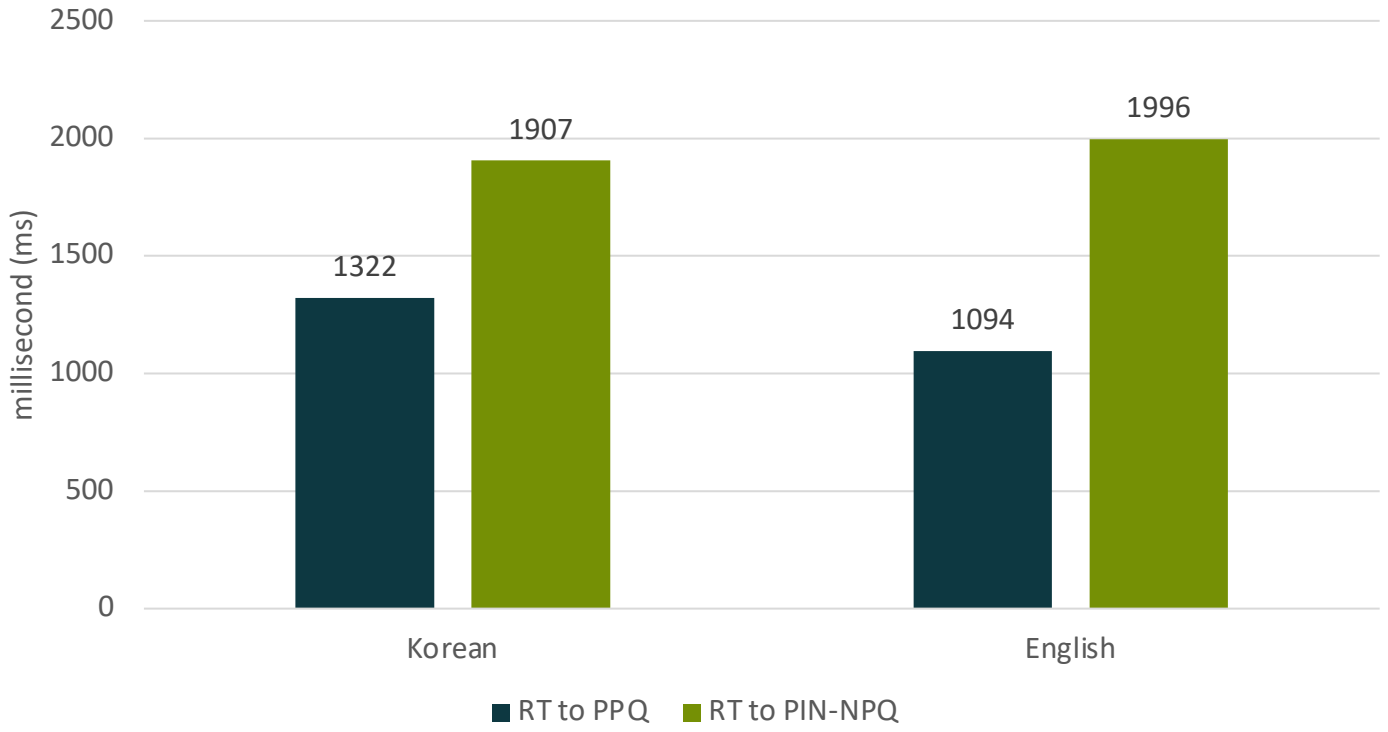


Korean: PPQ=1077ms
High-NPQ=1504ms
p<.001

English: PPQ=1046ms
High-NPQ=1114ms
***p*=.063**

South Carolina

Response time (RT) in Exp 2

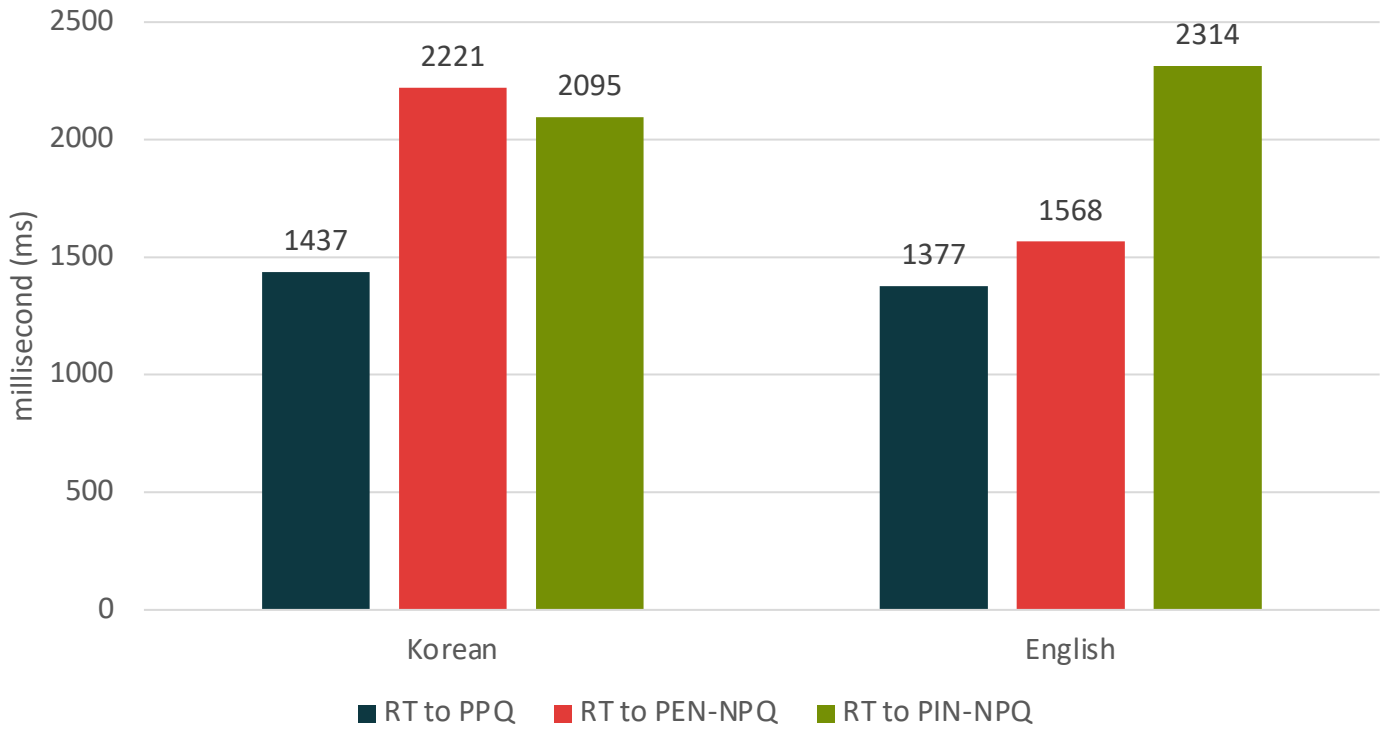


Korean: PPQ=1322ms
Low-NPQ=1907ms
p<.001

English: PPQ=1094ms
Low-NPQ=1996ms
p<.001

South Carolina

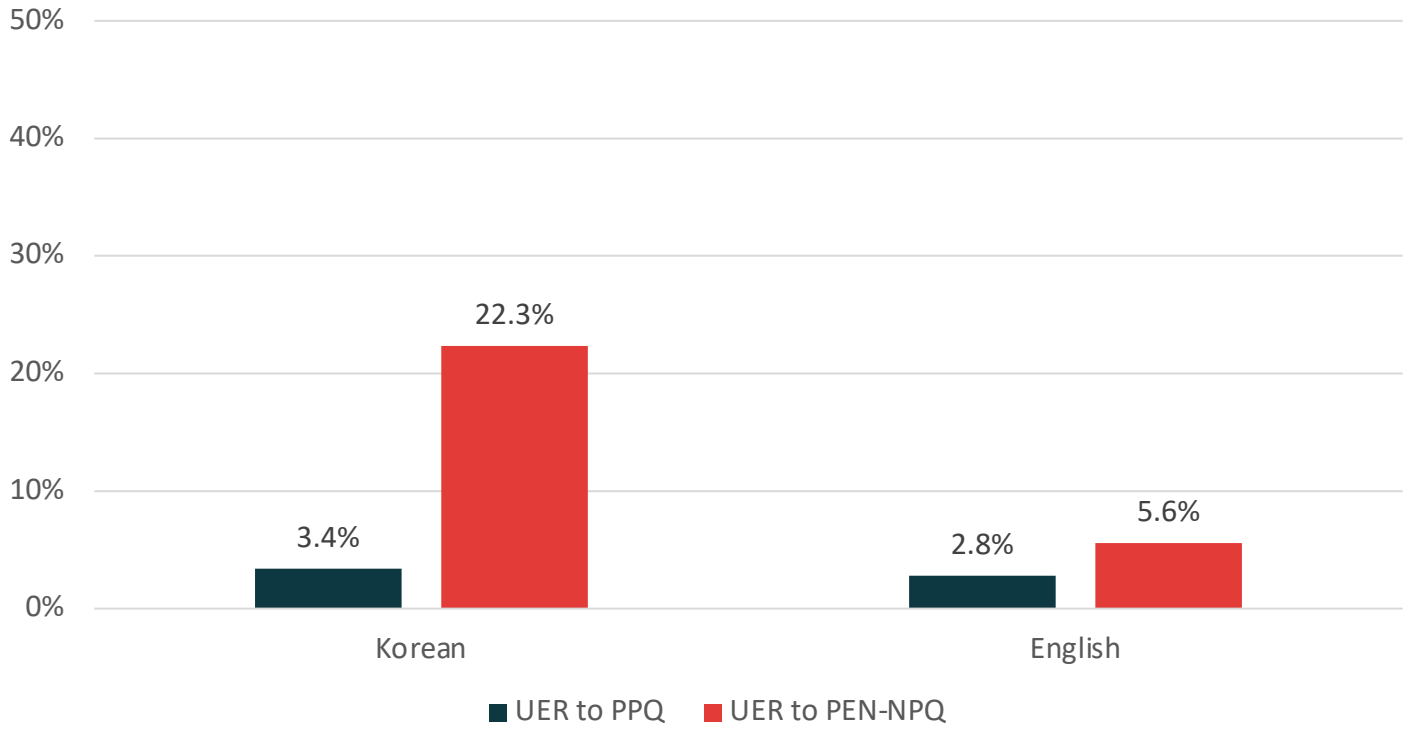
Response time (RT) in Exp 2



Korean: PPQ=1437ms
High-NPQ=2221ms
Low-NPQ=2095ms
$F(2, 789)=97.529$, $p<.001$

English: PPQ=1377ms
High-NPQ=1568ms
Low-NPQ=2314ms
$F(2, 1653)=249.27$, $p<.001$

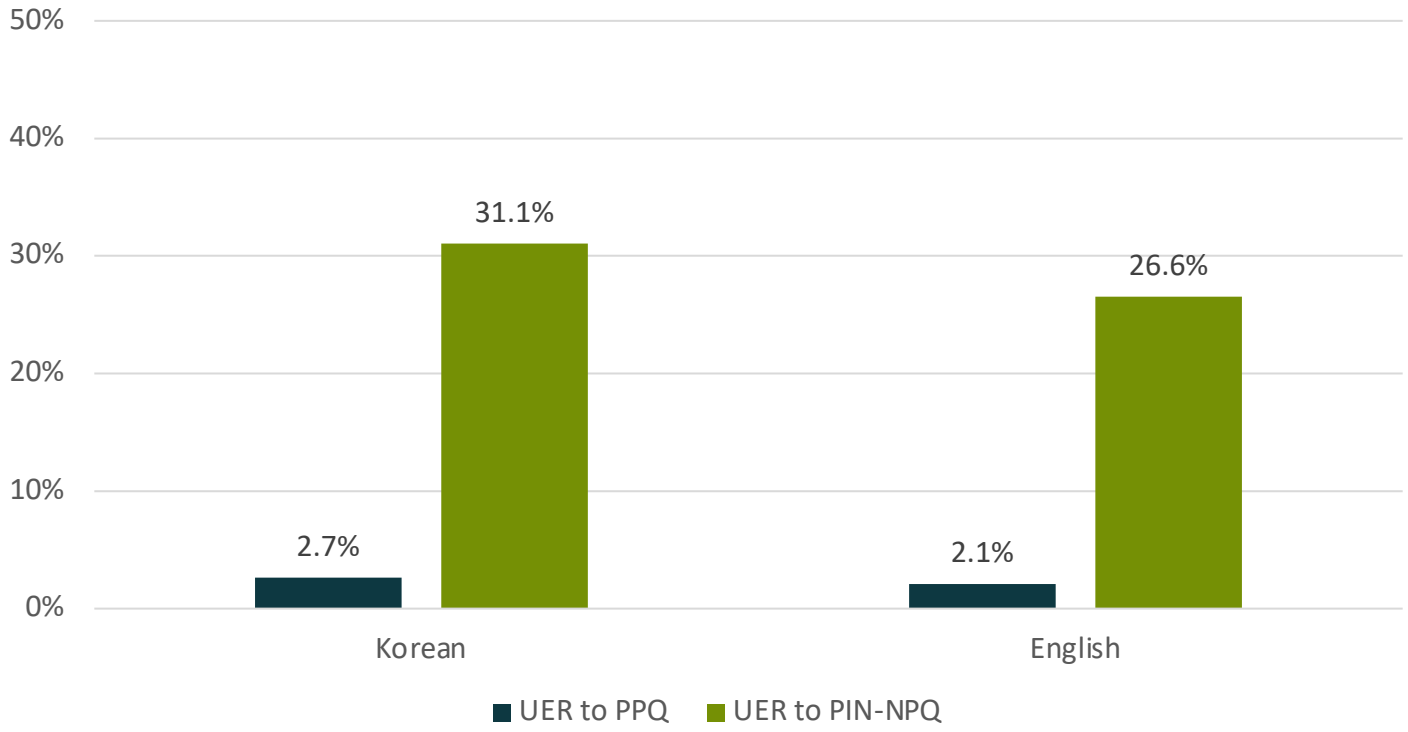
Unexpected response (UER) in Exp 1



Korean: PPQ=3.4%
High-NPQ=22.3%
p<.001

English: PPQ=2.8%
High-NPQ=5.6%
***p*=.062**

Unexpected response (UER) in Exp 2

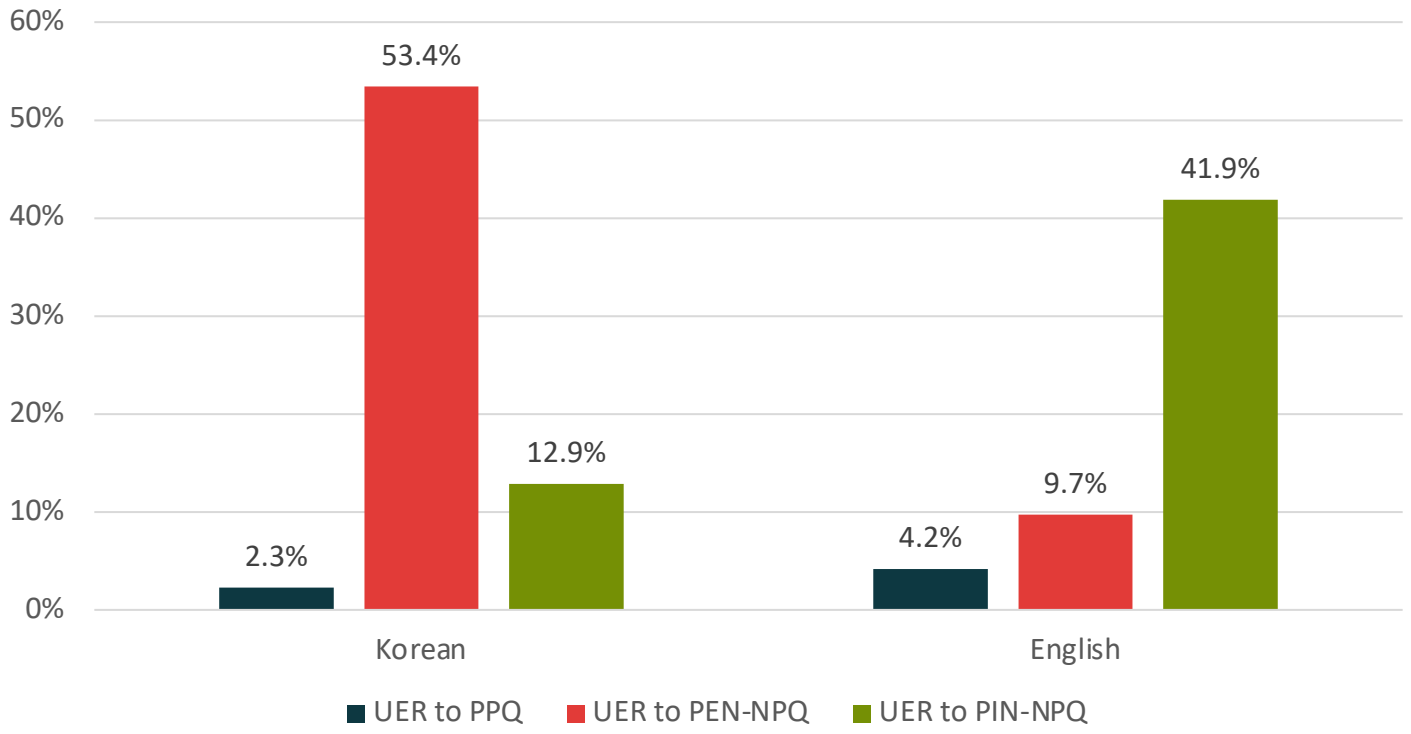


Korean: PPQ=2.7%
Low-NPQ=31.1%
p<.001

English: PPQ=2.1%
Low-NPQ=26.6%
p<.001

South Carolina

Unexpected response (UER) in Exp 3



Korean: PPQ=1437ms
High-NPQ=2221ms
Low-NPQ=2095ms
$F(2, 789)=147.48$, $p<.001$

English: PPQ=1377ms
High-NPQ=1568ms
Low-NPQ=2314ms
$F(2, 1653)=170.09$, $p<.001$

Discussion

- Both English and Korean participants responded differently to each question type in linguistically decontextualized conditions.
- In responding to two distinct NPQ types of each language (i.e., High-negation vs. Low-negation in English and LFN vs. SFN in Korean), possible syntactic complexity and semantic ambiguity may have led to slower RTs and higher UERs.
- Both languages allow negation to appear in different positions (inside vs. outside VP), and these positions appear to correlate with their being interpreted either inside or outside the question proposition.

Discussion

- Faster RTs and Low UERs for English High-negation NPQs and Korean SFN-NPQs suggest that these constructions are potentially less ambiguous or less syntactically complex than their respective counterparts in each language (Low-negation NPQs in English and LFN-NPQs in Korean).
- The data collected here support the PIN-PEN dichotomy in both English and Korean, and participants' RTs and UERs in the experiments supported that languages are not strictly distinguished according to the traditional truth- or polarity- typology.
- Interlanguage and interpersonal variation

CHAPTER 5.
L2 INTERPRETATION OF POLAR QUESTIONS
CHAPTER 6.
L2 LEARNER AWARENESS OF NPQS

In the previous L2 studies…

- Previous L2 studies on the acquisition of NPQs have simply accepted an illusory typological distinction (Choi 1991; Akiyama 1992; Zhang & Vanek 2021; and others).
- They mostly conclude that there are two distinct answering patterns, and the “English pattern” is easier to acquire than “Korean pattern”.
- Moreover, they argue that L2 learners whose L1 uses the opposite answering pattern would have more difficulties in the acquisition of L2 NPQs.

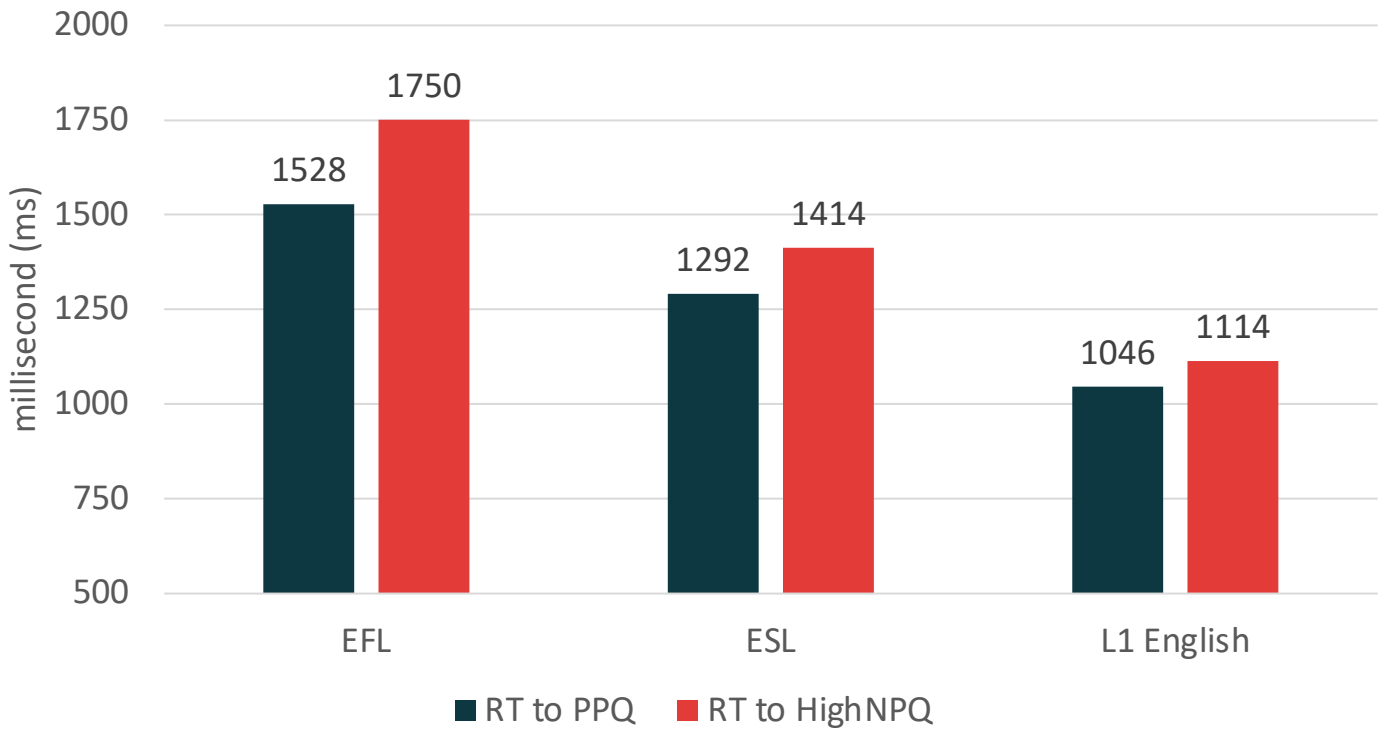
Methodology

- Three online experiments tested Korean EFL and ESL learners' interpretations of NPQs.
  - 33 EFL learners (basic): high school and undergraduate students in Daegu, Korea
  - 60 ESL learners (advanced): undergraduate and graduate students in USC & ISU
- The experiments manipulated:
  - Experiment 1
    - 24 positive polarity questions (PPQs) vs. 24 High-negation NPQs (High-NPQs)
  - Experiment 2
    - 24 PPQs vs. 24 Low-negation NPQs (Low-NPQs)
  - Experiment 3
    - 24 PPQs vs. 24 High-NPQs vs. 24 Low-NPQs

Expectations

- L2 learners < L1 English speakers
  - Slower RTs < Faster RTs
  - Higher UERs < Lower UERs
- Basic EFL learners < Advanced ESL learners
  - Slower RTs < Faster RTs
  - Higher UERs < Lower UERs

Response time (RT) in Exp 1



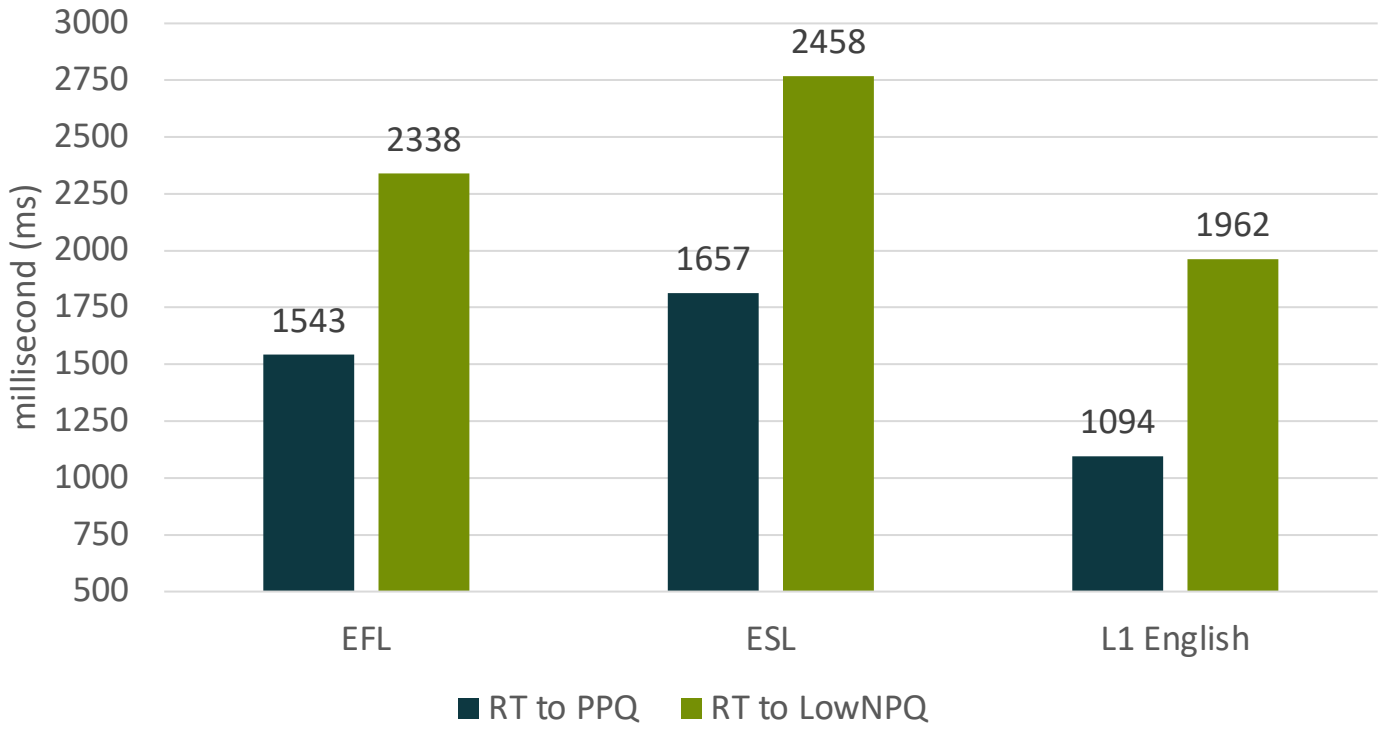
EFL: PPQ=1528ms
High-NPQ=1750ms
p<.001

ESL: PPQ=1292ms
High-NPQ=1414ms
p<.001

L1 English: PPQ=1046ms
High-NPQ=1114ms
p=.063

South Carolina

Response time (RT) in Exp 2



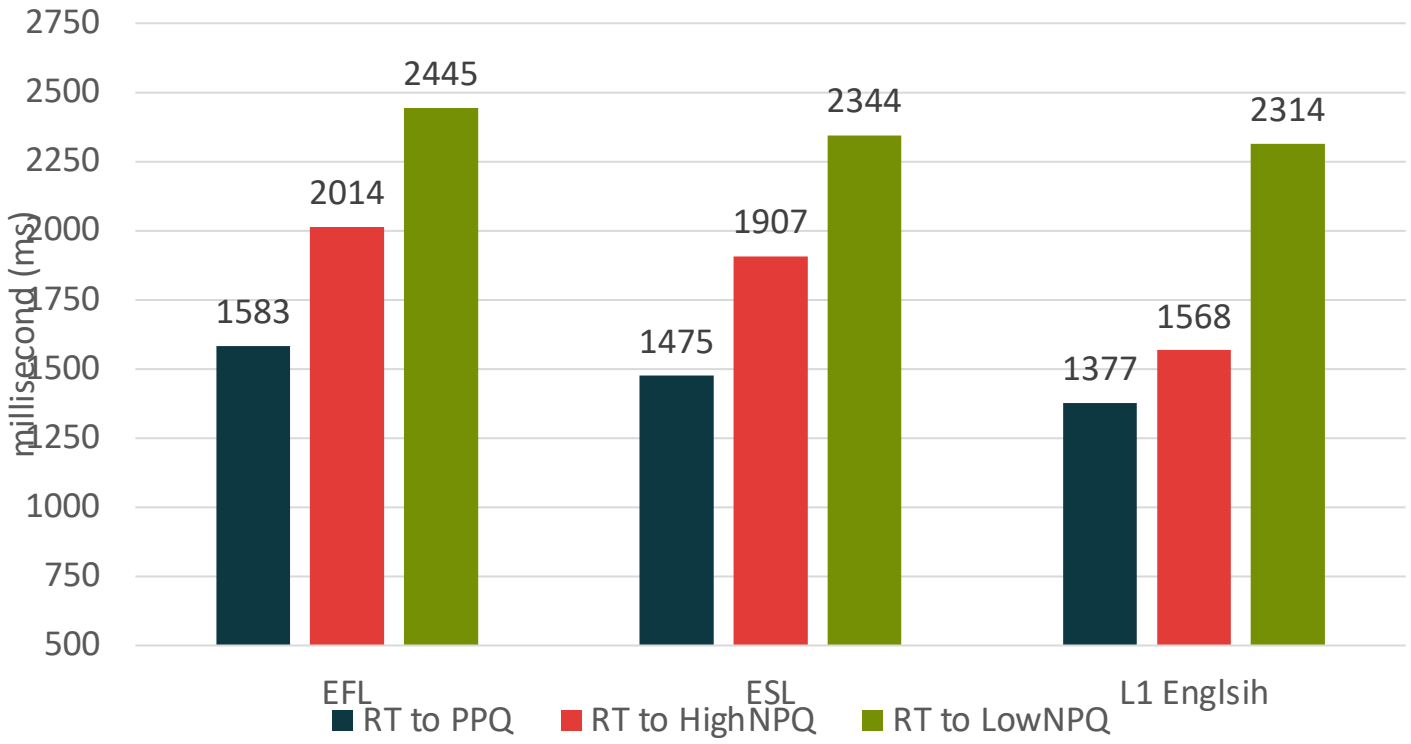
EFL: PPQ=1543ms
Low-NPQ=2338ms
p<.001

ESL: PPQ=1657ms
Low-NPQ=2458ms
p<.001

L1 English: PPQ=1094ms
Low-NPQ=1962ms
p<.001

South Carolina

Response time (RT) in Exp 2

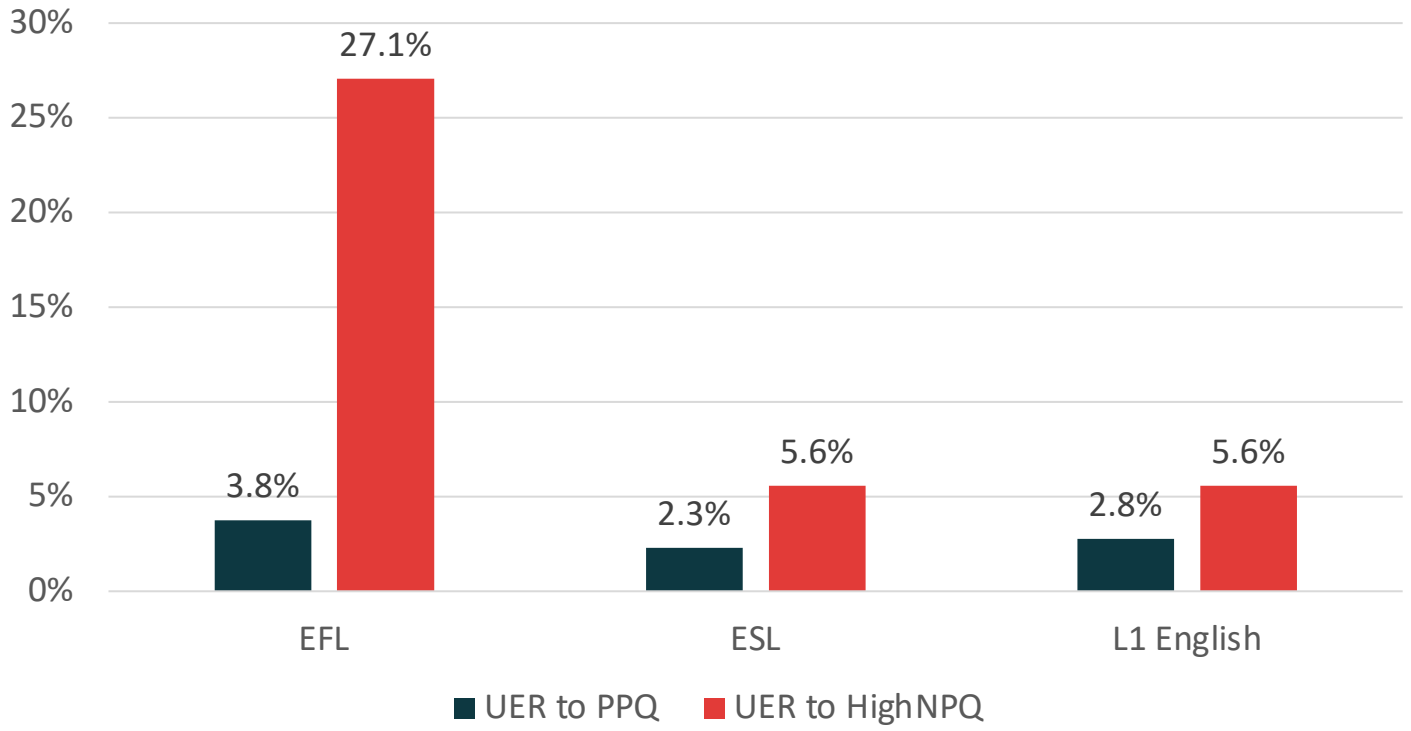


EFL: $F(2, 717) = 69.318$, $p<.001$

ESL: $F(2, 1365) = 109.15$, $p<.001$

L1 English: $F(2, 1653) = 249.27$, $p<.001$

Unexpected response (UER) in Exp 1



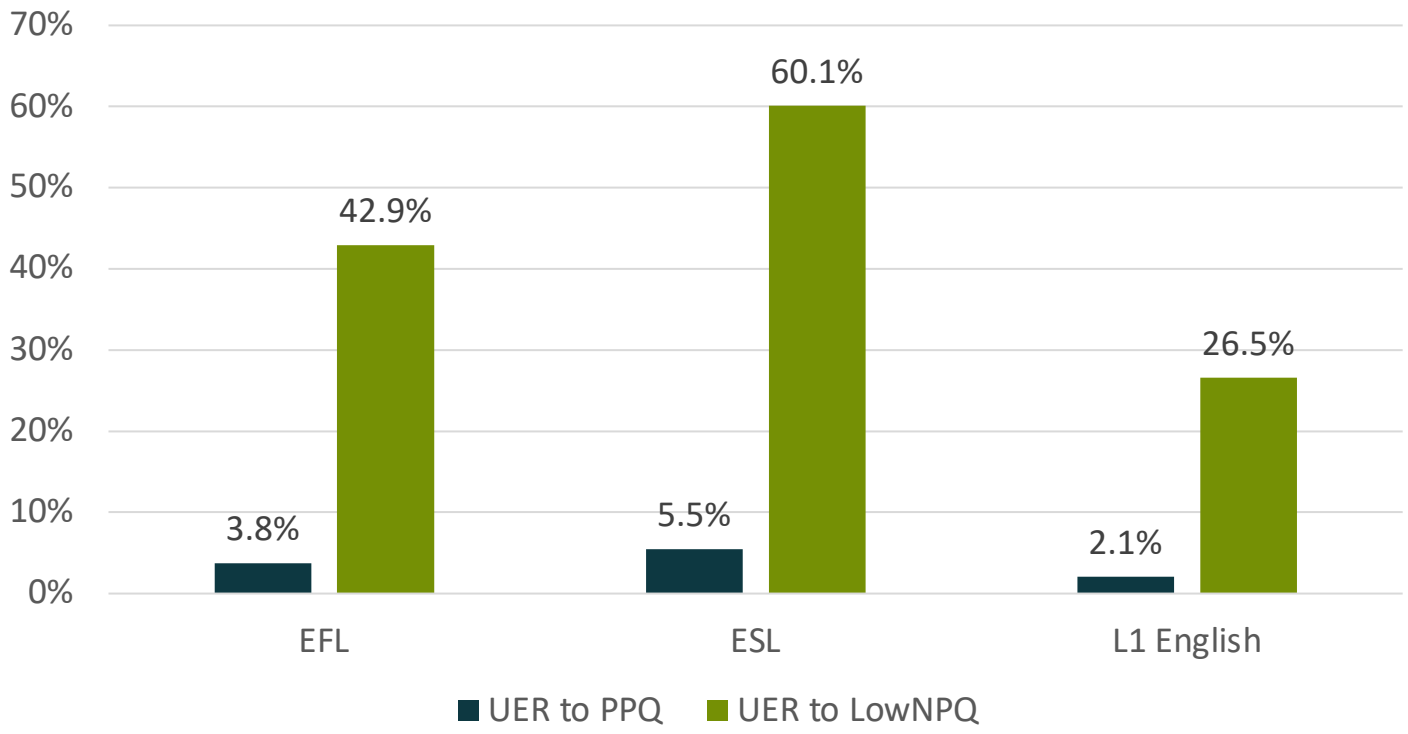
EFL: PPQ=3.8%
High-NPQ=27.1%
p<.001

ESL: PPQ=2.3%
High-NPQ=5.6%
p<.05

L1 English: PPQ=2.8%
High-NPQ=5.6%
p=.062

South Carolina

Unexpected response (UER) in Exp 2

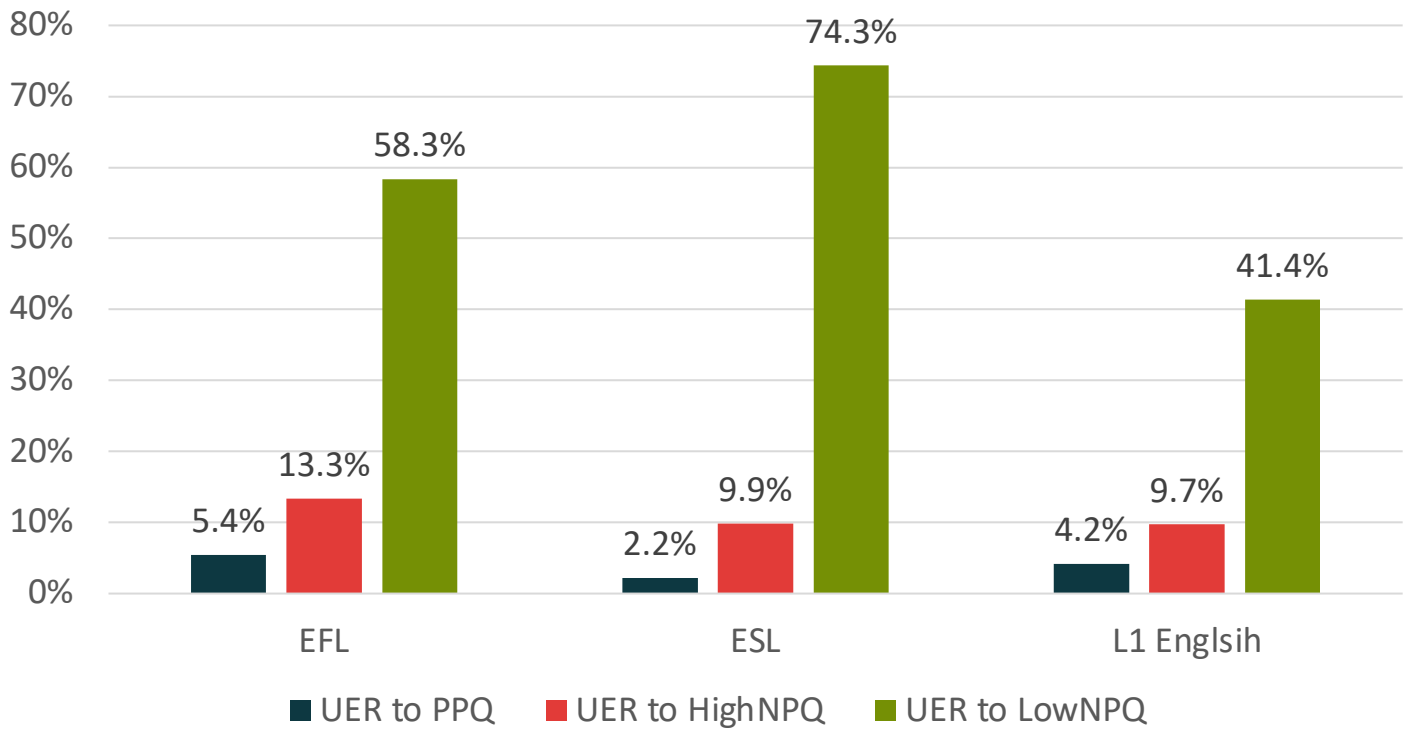


EFL: PPQ=3.8%
Low-NPQ=42.9%
p<.001

ESL: PPQ=5.5%
Low-NPQ=60.1%
p<.001

L1 English: PPQ=2.8%
Low-NPQ=26.5%
p<.001

Unexpected response (UER) in Exp 3



EFL: $F(2, 717) = 142.52$, $p<.001$

ESL: $F(2, 1365) = 689.59$, $p<.001$

L1 English: $F(2, 1653) = 170.09$, $p<.001$

Discussion

- EFL and ESL learners had fewest problems with PPQs.
- EFL and ESL learners show significantly different results in answering two distinct types of English NPQs.
- For High-NPQs, involving negation and pragmatic calculations, EFL and ESL learners had slower RTs than PPQs.
- ESL learners had nearly native-like UERs, while the EFL learners had much higher UERs (and, presumably, confusion).

Discussion

- For Low-NPQs, all three groups (including L1 English) show slower RTs than High-NPQs.
- This may be attributable to their tending to be semantically ambiguous and pragmatically complex.
- However, unexpectedly, the more advanced ESL group shows significantly slower RTs and higher UERs than less proficient EFL group.
- Why did the advanced ESL learners have more problems specifically in answering Low-NPQs?

Discussion

- The unexpected result reveals that ESL learners who have learned English longer time systematically answered Low-NPQs as High-NPQs.
- No semantic-pragmatic differences between two NPQ types
- Although ESL learners have been exposed to native English for a longer time, they may not have enough opportunity to learn the use of this NPQ type.
  - The frequency of Low-NPQ is extremely low in natural language.
  - High-NPQ is more generally used in normal conversation.

Discussion

- Unfortunately, both EFL and ESL learners in the current study learned English as a foreign language in classroom settings.
- Some participants mentioned that they had learned that English NPQs should be answered as though they are all logically contradictory to Korean NPQs.
- This is what the traditional answering typology argues, and more advanced L2 learners sincerely followed the way they learned at school.

Pedagogical implication

- The myth of traditional answering typology is too overwhelming in L2 acquisition.
- I have looked into several prominent English grammar books in order to ascertain how they explain the interpretation of English NPQs.
  - *Cambridge grammar of English* (2006) by Carter & McCarthy
  - *The Oxford Handbook of English Grammar* (2020) by Aarts et al.
  - *The grammar book* (1999) by Celce-Murcia & Larsen-Freeman
  - *Cambridge grammar of English* (2006) by Carter & McCarthy
  - *Understanding and Using English Grammar* (2009) by Azar & Hagen
  - *Collins COBUILD English Grammar* (2017) by Collins UK
  - *English Syntax* (1995) by Baker

Pedagogical implication

"Negative interrogatives are normally used to ask biased rather than neutral questions, and when there is bias towards a positive answer this is sufficient to admit the PPIs even though they are in the scope of the negative."

(*The Cambridge grammar of the English language*, p.830)

In English negative y/n questions, the negative may appear in both contracted and uncontracted forms. Only the contracted form, however, may appear sentence-initially as part of an operator.

Isn't it appropriate to ask?

Is it not appropriate to ask?

The question with the uncontracted negative after the subject is more formal than its counterpart with a question-initial contracted negative.

(*The grammar book*, p. 217–218)

Pedagogical implication

- In order to ascertain how English NPQs are delivered in formal schooling overall in secondary schools in South Korea, I have investigated the frequency of all English NPQs in English textbooks used in middle and high schools (similar to 6th – 12th grades in the US system).
  - 13 textbooks for 1st grade of middle school
  - 13 textbooks for 2nd grade of middle school
  - 12 textbooks for 3rd grade of middle school
  - 11 textbooks for 1st grade of high school

Pedagogical implication

Table 6.1 The frequency of NPQs in English textbooks in secondary schools

	not	n't	+YNQ	-YNQ	+whQ	-whQ
Middle 1	86 (6.6*)	173 (13.3)	145 (11.2)	23 (1.8)	188 (14.5)	8 (0.6)
Middle 2	137 (10.5)	183 (14.1)	190 (14.6)	20 (1.5)	188 (14.5)	12 (0.9)
Middle 3	209 (17.4)	264 (22.0)	152 (12.7)	16 (1.3)	197 (16.4)	10 (0.8)
High 1	386 (35.1)	216 (19.6)	170 (15.5)	17 (1.5)	192 (17.5)	19 (1.7)
Total	818 (16.7)	836 (17.1)	657 (13.4)	76 (1.6)	765 (15.6)	49 (1.0)

*The numbers in parentheses show the number of categories per textbook.

**+YNQ means positive *yes-no* questions, -YNQ means negative *yes-no* questions, +whQ means positive *wh*-questions, and -whQ means negative *wh*-questions.

Pedagogical implication

- Given that L2 learners of English commonly have problems in answering English NPQs regardless of their proficiency, I found that even advanced L2 learners of English consistently use non-native like unexpected responses not distinguishing two types of English NPQs.
- Most EFL learners in South Korean who learn English as a foreign language in classroom settings are not exposed to sufficient English NPQ constructions.
- In order to help L2 learners acquiring the native-like interpretation of two distinct forms of NPQs, L2 instructors must not overlook the importance of the explicit and precise instruction regarding two distinct types of NPQs.

THANKS!