

(UN)BIASED NEGATIVE YES-NO QUESTIONS IN JAPANESE

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1. INTRODUCTION

1.1. TWO ISSUES REGARDING JAPANESE YES-NO QUESTIONS

Japanese yes-no questions can be formed by adding a sentence final particle NO or KA.
(i.e., no-YNQs and ka-YNQs, respectively)

- (1) a. Kimi-wa kinoo gakkoo-e it-ta {no/ka}?
you-TOP yesterday school-to go-PAST {NO/KA}
'Did you go to school yesterday?'
b. Hai, ikimashi-ta. / Iie, ikimas-en deshi-ta.
yes, go(POLITE)-PAST / no, go(POLITE)-NEG COP-PAST
'Yes, I did.' / 'No, I didn't.'

- (2) [CP ... no/ka] = Q-particle, Comp_{interrogative}

Two types of YNQs behave differently in negative sentences.

- (3) Polarity (mis)matching (Martin 1962, Kuno 1973, a.o.)
Negative no-YNQs (e.g. (5)): hai 'yes' answer → negative propositions
iie 'no' answer → positive propositions
Negative ka-YNQs (e.g., (6)): hai 'yes' answer → positive propositions
iie 'no' answer → negative propositions

- (4) Epistemic (un)bias
Negative no-YNQ (e.g., (5)): no epistemic bias (of the speaker)
Negative ka-YNQ (e.g., (6)): positive epistemic bias (of the speaker)

- (5) a. Kimi-wa kinoo gakkoo-e ika-nakat-ta no?
you-TOP yesterday school-to go-NEG-PAST NO
'Did you not go to school yesterday?'
b. Hai, ikimas-en deshi-ta. / Iie, ikimashi-ta.
yes go(POLITE)-NEG COP-PAST / no go(POLITE)-PAST
'(lit.) Yes, I didn't.' / '(lit.) No, I did.'

- (6) a. Kimi-wa kinoo gakkoo-e ika-nakat-ta ka?
you-TOP yesterday school-to go-NEG-PAST KA
'Didn't you go to school yesterday?'
b. Hai, ikimashi-ta. / #Iie, ikimas-en deshi-ta.
yes go(POLITE)-PAST / No go(POLITE)-NEG COP-PAST
'Yes, I did.' / #'No, I didn't.'
c. Iie, ikimas-en deshi-ta. Shinseki-no uchi-e ikimashi-ta kara.
no go(POLITE)-NEG COP-PAST relative-GEN house-to go(POLITE)-PAST because.
'No, I didn't. (It is) because I went to my relative's house.'

This paper examines these differences between no- and ka-YNQs along the following line:

- (7) The property of polarity (mis)matching (i.e., (3)):
ka-YNQs have a mono-clausal structure like English YNQs while no-YNQs have a bi-clausal structure which involves a null copular construction.
- (8) The structure of positive ka- and no-YNQs
a. ka-YNQs (mono-clausal)
[CP [IP Subj [VP Obj V]] ka]
b. no-YNQs (bi-clausal)
[CP [IP [VP [CP [IP Subj [VP Obj V]] no] (cop)]] (ka)]
- (9) The structure of negative ka- and no-YNQs
a. Negative ka-YNQs (mono-clausal)
[CP [IP Subj [VP Obj V]] NEG ka]
b. Negative no-YNQs (bi-clausal)
[CP [IP [VP [CP [IP Subj [VP Obj V]] NEG no] (cop)]] (ka)]

The suggested difference between the syntactic structure of ka- and no-YNQs provides us with a base for semantic/pragmatic account of speaker's epistemic (un)bias.

- (10) The property of epistemic (un)bias (i.e., (4)):
ka-YNQs, where negative morpheme always immediately precedes the question particle ka, bears conversational epistemic operator VERUM (Höhle 1992, Romero and Han 2002, 2004), which derives speaker's epistemic bias to the YNQs. no-YNQs, on the contrary, doesn't involve such an epistemic operator.

The existence of VERUM operator in Japanese ka-YNQs receives a support from Kuno's (1980) well known observation on the "scope" of the question particle.

(20) Kimi-wa kinoo gakkoo-e it-ta **no** (desu **ka**)?
 you-TOP yesterday school-to go-PAST NML. COP Q
 ‘Did you go to school yesterday?’

(21) a. Hai, **sou** desu.
 Yes so COP(polite)
 ‘Yes, it is so.’
 b. Iie, **chigai masu**.
 No different COP(polite)
 ‘No, it is different.’

sou refers to an entire complement clause

(22) Ken-wa Mary-ga kinoo gakkoo-e it-ta to hookoku si-ta.
 Ken-TOP Mary-NOM yesterday school-to go-PAST NML. report do-PAST
 ‘Ken reported that Mary went to school yesterday.’

Taroo-mo **sou** hookoku si-ta
 Taroo-also so report do-past
 ‘Taro reported so too.’

Revision of the particles *no* and *ka* in (2)

(23) a. [... *no*] = Nominalizer, Comp
 b. [... *ka*] = Q-particle, Comp_{interrogative}

The structure of negative questions in English and Japanese

(24) English: Mono-clausal
 [_{CP} Didn’t [_{IP} John [_{VP} go to the school]]]?

(25) Japanese: Mono-clausal & Bi-clausal
 a. [_{CP} [_{IP} Kimi-wa [_{VP} gakkoo-e ik-(anakat)]-ta] ka]
 You-TOP school-to go-NEG-PAST Q
 b. [_{CP} [_{IP} ... [_{CP} [_{IP} Kimi-wa [_{VP} gakkoo-e ik-(anakat)]-ta] no] (desu)] (ka)]
 You-TOP school-to go-NEG-PAST NML. be Q

→ Copular *da* (plain form) / *desu* (polite form) and question particle *ka* are always assumed to be in a sentence unpronounced if the sentence ends with nominalizer *no* pronounced in the raising intonation.

2.2. SEMANTIC COMPUTATION OF *No*-YNQs

Semantics of *Q*-particle

(26) $[[Q]] = \lambda p_{\langle s,t \rangle} \lambda q_{\langle s,t \rangle} [q = p \vee q = \neg p]$
 (Hamblin 1973, Groenendijk and Stokhof 1984)

An interpretation of *no*-YNQs

(An interpretation of *ka*-YNQs is provided in Section 3)

(27) Positive *no*-YNQs (14a,c)
 a. Kimi-wa kinoo gakkoo-e it-ta no (desu ka)?
 you-TOP yesterday school-to go-PAST NML. COP. Q
 b. LF: [_{CP} [_{IP} [_{CP} [_{IP} Kimi-wa kinoo gakkoo-e it-ta] no] desu] Q(=ka)]
 c. $[[(27b)]]$ = $\lambda q. [q = \lambda w. \text{it is that you went to school yesterday in } w \vee$
 $q = \lambda w. \neg[\text{it is that you went to school yesterday in } w]]$
 = {“it is that you went to school yesterday”,
 “it isn’t that you went to school yesterday”}

(28) Negative *no*-YNQs (16a,c)
 a. Kimi-wa kinoo gakkoo-e ika-nakat-ta no (desu ka)?
 you-TOP yesterday school-to go-NEG-PAST NML. COP. Q
 b. LF: [_{CP} [_{IP} [_{CP} [_{IP} Kimi-wa kinoo gakkoo-e it-ta] NEG(=nai)] no] desu] Q(=ka)]
 c. $[[(28b)]]$ = $\lambda q. [q = \lambda w. \text{it is that } \neg[\text{you went to school yesterday}] \text{ in } w \vee$
 $q = \lambda w. \neg[\text{it is that } \neg[\text{you went to school yesterday}] \text{ in } w]]$
 = {“it is that you **didn’t** go to school yesterday”,
 “it isn’t that you **didn’t** go to school yesterday”}

The following question arises ...

Why do the negative *ka*-YNQs in (16b,d), not *no*-YNQs in (16a,c), bear (positive) epistemic bias on speaker’s side?

3. SECOND ISSUE: HOW DO YNQs BEAR SPEAKER'S EPISTEMIC BIAS?

3.1. VERUM APPROACH: ROMERO AND HAN (2002, 2004)

Epistemic implicatures

- (29) Does John *really* drink? (Romero and Han 2004: 37)
 Negative epistemic implicature:
 The speaker believed or at least expected that John **does not** drink.
 (cf.) Does John drink? (no epistemic implicature)
- (30) Doesn't John drink? (Romero and Han 2004: 1)
 Positive epistemic implicature:
 The speaker believes or at least expects that John drinks.
 (cf.) Does John not drink? (no epistemic implicature)

These questions are generally used to dissolve a conflict between speaker's and addressee's epistemic state toward a proposition p .

Conversational epistemic operator VERUM (Höhle 1992, Romero and Han 2002, 2004)

VERUM/*really* is a conversational epistemic operator that turns YNQs into questions asking speaker's/addressee's certainty about *adding a proposition p to the Common Ground (CG)*, CG being a set of propositions that speaker assumes in w to be true.

- (31) $[[\text{VERUM}_i]]^{\text{[i} \rightarrow \text{x}]} = [[\text{really}_i]]^{\text{[i} \rightarrow \text{x}]} =$
 $\lambda p_{\langle s,t \rangle} \lambda w. \forall w' \in \text{Epi}_x(w) [\forall w'' \in \text{Conv}_x(w') [p \in \text{CG}_{w''}]] =$
 FOR-SURE-CG $_x$ (abbreviation) (Romero and Han 2004: 43)

$\text{Epi}_x(w)$ = the set of epistemic alternatives of x at w

$\text{Conv}_x(w')$ = the set of worlds where all the conversational goals of x in w' are fulfilled.

- (32) a. Does John *really* drink?
 b. LF: $[_{CP} Q \text{ really}] (= \text{VERUM}) [_{IP} \text{ John drinks}]$
 c. $[[(32b)]]$ =
 $\lambda q. [q = \lambda w. \forall w' \in \text{Epi}_x(w) [\forall w'' \in \text{Conv}_x(w') [\lambda w''' \text{ drink } (j, w''') \in \text{CG}_{w''}]] \vee$
 $q = \lambda w. \neg \forall w' \in \text{Epi}_x(w) [\forall w'' \in \text{Conv}_x(w') [\lambda w''' \text{ drink } (j, w''') \in \text{CG}_{w''}]]]$
 = {"**It is for sure that we should add to CG that John drinks**",
 "It is not for sure that we should add to CG that John drinks"}

- (33) a. Doesn't John drink?
 b. LF: $[_{CP} Q \text{ not } [\text{VERUM} [_{IP} \text{ John drinks}]]]$
 c. $[[(33b)]]$
 = $\lambda q. [q = \lambda w. \neg \forall w' \in \text{Epi}_x(w) [\forall w'' \in \text{Conv}_x(w') [\lambda w''' \text{ drink } (j, w''') \in \text{CG}_{w''}]] \vee$
 $q = \lambda w. \neg \neg \forall w' \in \text{Epi}_x(w) [\forall w'' \in \text{Conv}_x(w') [\lambda w''' \text{ drink } (j, w''') \in \text{CG}_{w''}]]]$
 = {"**It is not for sure that we should add to CG that John drinks**",
 "It is for sure that we should add to CG that John drinks"}

- (34) The denotation of YNQs with VERUM/*really*
- | | | | |
|---------------|-----|--|---------------------|
| FOR-SURE $_x$ | p | | PROBABLY $_x p$ |
| | | | POSSIBLY $_x p$ |
| | | | |
| | | | FOR-SURE-NOT $_x p$ |

→ The question (29) and (30) double-checks (or doubts) addressee's belief in p (i.e., *that John drinks*) and $\neg p$ (i.e., *that John doesn't drink*), respectively.

N.B. Note that the denotation of the YNQ with *really* (32) and with preposed negation (33) give us **exactly the same partition** of the propositions. But speaker's opinion toward the proposition is negatively biased in (32) while it is positively biased in (33). On top of the semantics of VERUM, Romero and Han (2004) derive this difference of speaker's epistemic bias with the notion "intent of a question". The key here is which cell of the partition in YNQs the speaker actually "pronounce" (pronounced cell is in bold face in (32c) and (33c)).²

3.2. VERUM IN JAPANESE NEGATIVE YNQs

Ingredients to analyze Japanese negative ka-YNQs with speaker's epistemic bias

- (35) a. The difference of syntactic structure between *no-* and *ka-*YNQs
 b. Romero and Han's (2002, 2004) VERUM analysis

Since only negative *ka*-YNQs, not *no*-YNQs, bears speaker's positive epistemic bias, VERUM focus occurs only in *ka*-YNQs.

² Since the current purpose is to show that VERUM approach can be straightforwardly extended to Japanese YNQs (with some auxiliary assumptions), I don't go into the detail of the analysis of "intent of a question" here. I refer those who are interested in how "intent of a question" derives the polarity of speaker's epistemic bias to the works by Romero and Han (2004), Romero (2006) and von Rooy and Safarova (2003), whose work is done under Decision Theory.

(36) Positive *ka*-YNQs (cf. (27))

a. Kimi-wa kinoo gakkoo-e it-ta ka?
you-TOP yesterday school-to go-PAST Q

b. LF: $[_{CP} [_{IP} \text{Kimi-wa kinoo gakkoo-e it-ta}]] Q(=ka)$

c. $[[(36b)]]$ = $\lambda q. [q = \lambda w. \text{you went to school yesterday in } w \vee$
 $q = \lambda w. \neg[\text{You went to school yesterday in } w]]$
 = { “You went to school yesterday”, “You didn’t go to school yesterday” }

(37) Negative *ka*-YNQs (cf. (28))

a. Kimi-wa kinoo gakkoo-e ika-nakat-ta ka?
you-TOP yesterday school-to go-NEG-PAST Q

b. LF: $[_{CP} [[[_{IP} \text{Kimi-wa kinoo gakkoo-e it-ta}] \text{VERUM}]] \text{NEG}(=nai) Q(=ka)$

c. $[[(37b)]]$ =
 $\lambda q. [q = \lambda w. \neg\text{FOR-SURE-CG}_x [\text{you went to school yesterday in } w] \vee$
 $q = \lambda w. \neg\neg\text{FOR-SURE-CG}_x [\text{you went to school yesterday in } w]]$
 = { “it is not for sure that we should add to CG that you went to school yesterday,
 it is for sure that we should add to CG that you went to school yesterday.” }

Negative *ka*-YNQs provides us with unbalanced partition as English preposed negation YNQs in (33).

But how and why does VERUM occur in *ka*-YNQs?

3.3. KUNO’S (1980, 1982) OBSERVATION ON QUESTION SCOPE

The “scope” of question morpheme in Japanese is very limited (only to the preceding verb)

(38) The Scope of the Interrogative Particle:

The “scope” (“ ” added by me) of interrogative particle in Japanese does not extend beyond the verb, adjective, or ‘x da/desu’ that immediately precedes it except when the sentence has morphologically marked focus (namely, a wh-word) elsewhere.

(Kuno 1980: 11)

Semantic “focus” of the question needs to be under the “scope” of question particle *ka*. (N.B. Kuno’s notion of “focus” is different from the one understood generally in the current literature on focus.)

(39) a. Kimi-wa kono hon-o [yon-da]_F ka?
You-TOP this book-ACC read-PAST Q

‘Did you read this book?’ (Kuno 1980: (5a))

b. $[[(39a)]]$ = {you READ this book, you BOUGHT this book, you SOLD this book ... }

(cf.) *{you read THIS book, you read THAT book, you read KEN’S book ... }
 *{YOU read this book, KEN read this book, HANA read this book ... }

(40) Context: A teacher asks his students where they are born.

(# in this example is originally * in Kuno 1980)

a. #Kimi-wa Tookyoo-de [umare-ta]_F ka?

You-TOP Tokyo-in born-were Q

‘Were you born in Tokyo?’

(Kuno 1980: (13a))

b. $[[(40a)]]$ = {you were BORN in Tokyo, you were RAISED in Tokyo
 you MARRIED in Tokyo ... }

(cf.) *{you were born in TOKYO, you were born in OSAKA,
 you were born in NAGOYA ... }

The sentences in (40) becomes good if the sentence is nominalized with the help of nominalizer *no* and copular *da* ‘be’.

(41) a. Kimi-wa [[Tookyoo-de]_F umare-ta no] \emptyset /desu ka.
You-TOP Tokyo-in born-were NML. is Q

‘Were you born in Tokyo?’ (i.e., ‘**Is it that** you were born [in Tokyo]_F?’)

b. $[[(41a)]]$ = {you were born in TOKYO, you were born in OSAKA,
 you were born in NAGOYA ... }

There is nothing mysterious about the fact that the scope of *ka* extends beyond the copular. The following example shows that the connection between copular and predicates is strong.

(42) a. Yamada-wa gaka da.
Yamada-TOP painter be
 ‘Yamada is a painter’

- b. *Yamada-wa gaka-mo da.
Yamada-TOP painter-also is.
 ‘Yamada is also a painter’
- c. *Gaka_i Yamada-wa t_i da.
painter Yamada-TOP is.
 ‘A (great) painter Yamada is.’

(Kuno 1980: (9))

Kuno’s observation ensures that negation in *ka*-YNQs receives focus (i.e., VERUM focus) since negation immediately precedes the question particle.

- (37) a. Kimi-wa kinoo gakkoo-e ika-[nakat-ta]_F ka?
you-TOP yesterday school-to go-NEG-PAST Q
- b. LF: [_{CP} [_{IP} Kimi-wa kinoo gakkoo-e it-ta] VERUM] NEG(=nai) Q(=ka)]

3.4. EXTENTION OF THE ANALYSIS: LADD’S (1981) *P/¬P* AMBIGUITY

- (43) Didn’t Jane come?
 Positive epistemic implicature: Speaker believes that Jame came.

Preposed negation YNQs are actually ambiguous. Use of positive-/negative-polarity items distinguish two readings.

- (44) a. Didn’t Jane come **too**?
 A speaker double-checks **his own belief** (i.e., that Jane came) with an addressee, who believes that the opposite (i.e., that Jane didn’t come) is true.
- b. Didn’t Jane come **either**?
 A speaker double-checks **addressee’s belief** (i.e., that Jane didn’t come), believing that Jane came in fact.

Romero and Han (2002, 2004) argues that this ambiguity is truly semantic scope ambiguity between VERUM and negation.

- (45) a. The LF for (44a)
 [_{CP} Q not [VERUM [_{IP} Jane came **too**]]]
- b. [[(45a)] = {“**It is not for sure that we should add to CG that Jane came**”,
 “It is for sure that we should add to CG that Jane came”}

- c. The intent of a question:
 Are you not for sure that we should add to CG that **Jane came**?
- (46) a. The LF for (44b)
 [_{CP} Q VERUM [not [_{IP} Jane came **either**]]]
- b. [[(46a)] = {“**It is for sure that we should add to CG that Jane didn’t come**”,
 “It is not for sure that we should add to CG that Jane didn’t come”}
- c. The intent of a question:
 Are you for sure that we should add to CG that **Jane didn’t come**?

Similar ambiguity can be observed in Japanese negative *ka*-YNQs

PPIs/NPIs in Japanese

wh-ka (some-) = positive polarity item
wh-mo (any-/no-) = negative polarity item

- (47) a. Dare-ka ko naka-ta ka?
wh-KA(=someone) come NEG-PAST Q
 ‘Didn’t someone come?’
 A speaker double-checks **his own belief** (i.e., that someone came) with an addressee, who believes that the opposite (i.e., it isn’t that someone came) is true.
- b. Dare-mo ko naka-ta ka?
wh-MO(=no one) come NEG-PAST Q
 ‘(lit.) Didn’t anyone come?’ (Isn’t it not that anyone came?)
 A speaker double-checks **addressee’s belief** (i.e., that no one came), believing that it isn’t that no one came (= someone came).
- (48) a. The LF for (47a)
 [_{CP} [_{IP} dare-ka ki-ta] VERUM] NEG(=nai) Q(=ka)]
- b. [[(48a)] = {“**It is not for sure that we should add to CG that someone came**”,
 “It is for sure that we should add to CG that someone came”}
- c. The intent of a question:
 Are you not for sure that we should add to CG that **someone came**?

- (49) a. The LF for (47b)
 [CP [[IP dare-mo ki-ta]NEG] VERUM Q]
- b. [[(49a)] = {“**It is for sure that we should add to CG that no one came**”,
 “It is not for sure that we should add to CG that no one came”}
- c. The intent of a question:
 Are you for sure that we should add to CG that **no one came**?

4. CONCLUSION

- Japanese *no*-YNQs, that have been treated on a par with English YNQs, are in fact YNQs of null copular constructions. Therefore they have more complex structure than English YNQs.
- Japanese *ka*-YNQs have a mono-clausal structure, and they can be treated on a par with English YNQs.
- Combined with Kuno’s (1982) observation on the scope of question particle, Romero and Han’s VERUM approach can be extended to Japanese YNQs straightforwardly to explain speaker’s epistemic implicature in *ka*-YNQs.

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