

# Interpreting Bare Nouns: Type-Shifting vs. Silent Heads

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## 1 Overview

- Theses:
  - (1) Japanese bare NPs (JBNs) do not contain silent determiners.
  - (2) JBN interpretations are the result of semantic rules that add content (and shift type).
- Argument from null arguments (NAs) anaphora.

Silent heads are not compatible with any analysis of NAs.

## 2 Background

- BNs in articleless languages such as Chinese and Japanese can express a variety of interpretations.
  - (3) a. KIND-REFERENCE  
ex. *Inu-ga zetumetusita.*  
dog-NOM extinct.became  
'Dogs went extinct.'
  - b. GENERIC QUANTIFICATION  
ex. *Inu-ga hoeru no-wa atarimae-da.*  
dog-NOM bark COMP-TOP obvious-be  
'It's obvious that dogs bark.'
  - c. EXISTENTIAL QUANTIFICATION  
ex. *Inu-ga hoeta.*  
dog-NOM barked  
'Dogs barked.'

d. EXISTENTIAL QUANTIFICATION

ex. *watasi-wa kyo campus de inu-o mita.*  
 I-TOP today campus on dog-ACC saw  
 ‘I saw a dog on campus today.’

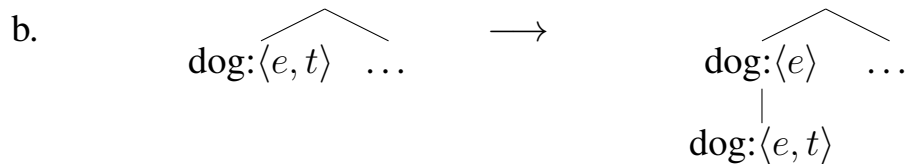
e. EXISTENTIAL QUANTIFICATION AND INDIVIDUAL (ANAPHORIC) REFERENCE

ex. *Inu-ga bar-ni haittekita. John-wa inu-o mita.*  
 dog-NOM bar-to entered. John-TOP dog-ACC saw.  
 ‘A dog entered the bar. John looked at the dog.’

• Two Approaches:

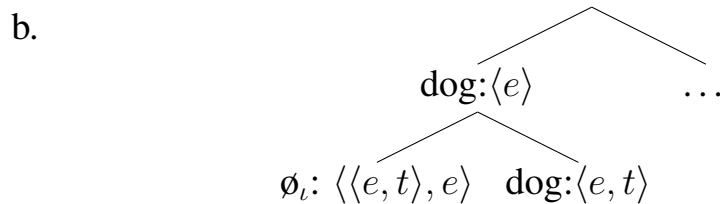
i. Semantic rules (e.g., Partee (1986); Chierchia (1998); Dayal (2004))

(4) a. Rule  $\iota$ :  $\langle e, t \rangle \longrightarrow \langle e \rangle$



ii. Silent functional heads (e.g., Cheng and Sybesma (1999); Watanabe (2006))

(5) a. Head  $\iota$ :  $[_D \emptyset_\iota]$



- It is hard to decide between the two options, absent psychological (Pylkkänen, 2008) or morphological criteria.

### 3 Against Silent Heads

- With a silent head analysis, no satisfactory account of NA with a BN antecedent can be given.
- Suppose for reductio silent functional heads determine JBNs' interpretations.

#### 3.1 Facts: BNs and NAs

- The interpretations of BNs and NAs do not have to be equivalent.

(6) BN: KIND — *e*: EXISTENTIAL

ex. *Americajin-ga cola-o hatumeisi, Doitujin-ga [ e ]*  
American-NOM **cola**-ACC invented.and, German-NOM [ e ]  
*syohisita.*  
consumed.  
'An American invented cola; Germans consumed it'

(7) BN: EXISTENTIAL — *e*: KIND

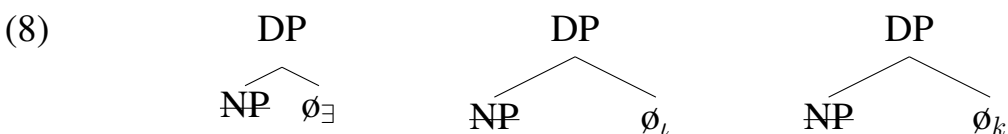
ex. *Aru Portugaljinno funanori-ga dodo-o saisyoni tabe,*  
a.certain Portuguese sailor-NOM **dodo**-ACC first eat,  
*Olandajin-ga notini [ e ] zetumetusa-seta.*  
Dutch-NOM later [ e ] extinct.become-forced  
'A Portuguese sailor ate a dodo first, and the Dutch people later exterminated them.'

#### 3.2 Four Possible Analyses of NAs (i-iv)

- NAs are analyzed as ellipses or empty pronominals.

##### 3.2.1 If *e* is elliptical

- (i) *e* is the maximal projection of any given silent head whose constituent NP gets deleted (or unpronounced).



- (9) a. John bought [ every [<sub>NP</sub> required textbook]],  
but Mary bought only [ some/a few [<sub>NP</sub> required textbook ]].  
b. John bought [ three [<sub>NP</sub> books]], and Mary bought [five [<sub>NP</sub> books ]].

- However, (i) is incompatible with NP or N'-deletion in Japanese.
- Determiner-like expressions do not allow NP-deletion.

(10) DEMONSTRATIVE AND QUANTIFICATIONAL MODIFIERS

*Taro-wa [ko-no/korera-no/ikutuka-no kuruma] -o katta.*  
Taro-TOP this/these/several car -ACC bought.  
*\*Hanako-wa [a-no/arera-no/subete-no kuruma] -(o) katta.*  
Hanako-TOP that/those/every car -(ACC) bought.  
'Taro bought this/these/several car(s). Hanako bought that/those/every one(s).'

- N'-deletion seems possible only when
  1. NP is modified by a possessive/locative/temporal *no*-phrase (11a-d) OR
  2. NP has a floating quantificational phrase (FQP) (12a-d).

1. NP is modified by a possessive/locative/temporal *no*-phrase.

(11) a. POSSESSIVE *No*-PHRASE

ex. [*Taro no taido*] -wa yoi ga, [*Hanako no taido*] -wa  
Taro 's attitude -TOP good though, Hanako 's attitude -TOP  
*yokunai.*  
good.not  
'Though Taro's attitude is good, Hanako's isn't.'

b. LOCATIVE *No*-PHRASE

ex. [*Rome no hakai*] -wa [*Kyoto no hakai*] -yorimo  
Rome 's destruction -TOP Kyoto 's destruction -than  
*hisan datta.*  
miserable was  
'Rome's destruction was more miserable than Kyoto's.'

c. TEMPORAL *No*-PHRASE

- ex. [*Kyoo no ondo*] -wa [*kinoo no ɒndø*] -yorimo  
 today no temperature -TOP yesterday no temperature -than  
*takai*  
 high  
 ‘Today’s temperature is higher than yesterday’s.’

d. ADJECTIVAL *No*-PHRASE

- ex. \**[Hare no hi]-wa yoi ga, [ame no hi]-wa*  
 clear no day-TOP good though, rain no day-TOP  
*otikomuu.*  
 feel.depressed  
 ‘Sunny days are OK, but I feel depressed on rainy days.’ (Saito et al., 2008)

2. NP has a floating quantificational phrase.

(12) a. NP-CASE-(ADVERB)-QP

- ex. *Boku-wa hon-o (campus-de) [i-satu] kai, Hanako-wa*  
 I-TOP book-ACC campus-on one-CL bought, Hanako-TOP  
*hɒn-ø (Amazon-de) [san-satu] katta.*  
 book-ACC Amazon-on three-CL bought  
 ‘I bought one book on campus, and Hanako bought three on Amazon.’

b. QP-*no*-NP-CASE

- ex. \**Taro-wa iti-niti-ni [san-satu no hon]-o yomu ga,*  
 Taro-TOP one-day-in three-CL no book-ACC read though,  
*Hanako-wa [go-satu no hɒn] -o yomu.*  
 Hanako-TOP five-CL no book -ACC read  
 Taro reads three books in a day, but Hanako reads five.’ (Saito et al., 2008)

c. NP-QP-CASE

- ex. \*?*Boku-wa [inu i-ppiki]-o turetekita ga, Hanako-wa*  
 I-TOP dog one-CL-ACC brought though, Hanako-TOP  
*[inu ni-hiki]-o turetekita.*  
 dog two-CL-ACC brought  
 ‘I brought one dog, but Hanako brought two.’

d. NP-CASE-(ADVERB)-QP

ex. *Boku-wa [inu i-ppiki]-o turetekita ga, Hanako-wa*  
I-TOP dog one-CL-ACC brought though, Hanako-TOP  
*inu-o (gakko-ni) [ni-hiki] turetekita.*  
dog-ACC (school-to) two-CL brought  
'I brought one dog, but Hanako brought two to school.'

- $\emptyset_{k/\exists/l}$  is neither a possessive *no*-phrase nor an FQP.
  - $\emptyset_{k/\exists/l}$  does not look like a possessive.
  - FQPs are subject to several semantic restrictions (Nakanishi, 2007).
    1. An FQP that modifies a subject disallows a collective reading (13a-b), whereas BNs can have collective readings (14).
    2. An FQP also forces a non-specific reading in an intentional construction, but BNs in general have no such semantic restrictions (15a-b).

1. FQP and Collective Reading

(13) a. *[Otokonoko san-nin]-ga kinoo booto-o tukutta.*  
[Boy three-CL]-NOM yesterday boat-ACC made  
'Three boys built a boat yesterday.' (✓ distributive, ✓ collective)

b. *Otokonoko-ga kinoo [san-nin] booto-o tukutta.*  
Boy-NOM yesterday [three-CL] boat-ACC made  
'Three boys built a boat yesterday.' (✓ distributive, ??collective)  
(Nakanishi, 2007, 58)

(14) *Otokonoko -ga kinoo yon-dai-no booto-o tukutta.*  
Boy -NOM yesterday four-CL-no boat-ACC made  
'A/The/Some boy(s) made four boats.' (✓ distributive, ✓ collective)

## 2. FPQ and Specificity

- (15) a. *John-wa piano-o [ni-dai] kaitagatta.*  
John-TOP piano-ACC two-CL buy.wanted  
'John wanted to buy two pianos' (✓ non-specific, ??specific)
- b. *John-wa piano-o kaitagatta.*  
John-TOP piano-ACC buy.wanted  
'John wanted to buy a piano/the piano(s)' (✓ non-specific, ✓ specific)

- The alternative analyses under the assumption that NAs are elliptical are far less promising (Appendix).

### 3.2.2 If $e$ is an silent pro-DP

(ii)  $e$  is a pronominal of some sort, not an ellipsis.

- Both referential/kind readings of  $e$  can be given by *pro*.

Consider English:

- (16) a. A man entered the bar. He was wearing a baseball cap backward.  
b. Why did dinosaurs become extinct? They became extinct because ...

- What about existential interpretation?
  1. Structured pronoun: [  $\exists \text{ pro}_{\langle e,t \rangle}$  ]?  
Existential closure must be introduced by a silent head, which would collapse into the analysis (i).
  2. Unstructured, existentially quantified pronoun:  
 $\lambda P_{\in D_{\langle e,t \rangle}}. \exists x [\Pi(x) \& P(x)]$  (where  $\Pi$  is a contextually salient property)  
(6) must be accommodated by an indefinite pronoun that is an existentially quantified NP.
- However, such a quantificational pronoun is problematic because  $e$  cannot produce an intermediate scope reading unlike an overt quantificational term *dareka* ('someone'):

(17) *Sorezoreno sensei-wa [seito no dareka]-ga okorareta*  
 Each teacher-TOP student *no someone*-NOM scold.PASSIVE.PAST  
*to kiita.*  
 COMP heard

- (17) has three different readings (18a-c), whereas a NA construction (19b) lacks the reading parallel to the second one (18b).

(18) a. For each teacher  $x$ ,  $x$  heard that, [for some student  $y$ ],  $y$  was scolded.  
 b. **For each teacher  $x$ , [for some student  $y$ ],  $x$  heard of  $y$  that  $y$  was scolded.**  
 c. [For some student  $y$ ], for each teacher  $x$ ,  $x$  heard of  $y$  that  $y$  was scolded.

(19) a. *Sorezoreno sensei-wa seito-ga okorareta to*  
 Each teacher-TOP **student**-NOM scold.PASSIVE.PAST COMP  
*kiita.*  
 heard

‘Each teacher heard that some student was scolded.’

b. *Sikasi sorezoreno oya-wa [ e ] nagurareta to kiita.*  
 But each parent-TOP [ e ] beat.PASSIVE.PAST COMP heard  
 ‘But each parent heard that some student was beaten.’

- Therefore, the silent-head approach is problematic under any analysis of NAs (i-iv).

## 4 Type-Shifting Approach

- Whatever analysis of NAs turns out to be on the right track, the type-shifting approach can account for the interpretations of NAs.

### 4.1 If $e$ is an ellipsis

- Any adequate semantic analysis of overt BNs applies to NAs because they are equivalent.

(20) a. .... BN .... NA ...  
 b. .... NP .... NP ...



## 4.2 If $e$ is a pronominal

- If JBNs uniformly denote kinds (Chierchia), then a *pro* would be assumed to be assigned a kind-denotation.

Then BNs and NAs are semantically equivalent because variable assignments assign kinds to NAs.

- (21) a. .... NP .... *pro* ...  
b. ....  $\langle e_k \rangle$  ....  $\langle e_k \rangle$  ...

- If JBNs start as predicates, we can introduce a type-neutral variable assignment, which can assign *pro* a value of type  $\langle e, t \rangle$  as well as  $\langle e \rangle$  (Tomioka, 2003).

Then again BNs and NAs are semantically equivalent after the assignment of values to variables.

- (22) a. .... NP .... *pro* ...  
b. ....  $\langle e, t \rangle$  ....  $\langle e, t \rangle$  ...

## 5 Conclusions

1. No silent determiner in JBNs:

A silent head analysis leads to a problem under any analysis of NAs.

Semantic rules, on the other hand, can provide a straightforward account for NAs.

2. Complexity outside of LF:

More research on type-shifting is required.

# Appendix

- Two alternative analyses of NAs under the assumption that they are elliptical.
  - We would need incredible premises to make either one of them work.
- (iii) The silent head  $\emptyset$  that is responsible for the interpretation of the antecedent BN is contained inside the elided constituent.

For example, in (6), if the antecedent BN *cola* has the structure

$[_{XP} \dots [_{NP} \dots N ] \emptyset_k]$ , where  $\emptyset_k$  determines its kind-reading, then  $e$  would be  $[_e \dots [_{XP} \dots [_{NP} \dots N ] \emptyset_k]]$ .

- (iii) cannot explain why  $e$  can have a different interpretation than that of its antecedent BN because they have one and the same syntactic and semantic profile.
- (iv) The silent head  $\emptyset$  in the antecedent is not contained in the elided constituent.

(6) is possible either if there is another silent head under  $\emptyset_k$  that has existential import, or the embedded NP by default has existential import.

$e$  is either  $[_e [_{NP} ] \emptyset_{\exists}]$  or  $[_e NP ]$ , which can yields an existential reading.

- However, (iv) cannot handle (6) and (7) at the same time.

To explain (7), we would also have to say either that two silent heads can freely line up or that the embedded NP is ambiguous between a kind and existential reading.

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