

Bound variable interpretation and the degree of accessibility

Takaaki Hara

Natural languages permit the use of different lexical items to encode a bound variable interpretation. However, it is not the case that one can freely use any of these lexical items to establish a bound variable reading. I claim that the choice of the appropriate lexical item follows from accessibility theory (Ariel 1990, 1991, 1994). Specifically, the structural distance between a dependent term and its antecedent QP at LF plays a role in the relative availability of a bound variable reading for different lexical items, the relevance of which can be gleaned by observing Japanese data.

1. Introduction

Natural languages employ different kinds of lexical items for a bound variable interpretation. For example, it is generally agreed that both pronominals and reflexives in English can be construed as bound variables, as shown in (1) and (2), and yet an expression like *that NP* can also be claimed to yield a bound variable interpretation. Observe (3).

- (1) a. Every boy_i wonders what he_i will become in the future.
b. $(\forall x: \text{boy}(x)) (x \text{ wonders what } x \text{ will become in the future})$
- (2) a. Every girl_i believes in herself_i.
b. $(\forall x: \text{girl}(x)) (x \text{ believes in } x)$
- (3) (Noguchi 1997: 785; originally from Evans 1977)
Every logician_i was walking with a boy near that logician_i's house.

Japanese also allows several options for a bound variable interpretation. A so-called anaphor *zibun* ‘self’ and a zero pronoun can readily induce a bound variable reading:¹

- (4) Daremo_i- gazibun_i-no/ec_i ryoosin-ni kansyasi-te i-ru.
 everyone-NOM self-GEN parents-DAT gratitude do-NF be-NPST
 ‘Everyone is grateful to self’s parents.’

Just like in English, an NP headed by *sono* ‘that’ can be used to express a bound variable reading as well (Nishigauchi 1986; Hoji 1991; Noguchi 1997):

- (5) Dono kaisya_i-mo sono kaisya_i-no seihin- home-ru.
 every company-too that company-GEN product-ACC praise-NPST
 ‘Every company praises that company’s products.’ (Noguchi 1997: 786)

Moreover, contrary to the standard observation, Japanese third person pronouns *kare* ‘he’ and *kanozzyo* ‘she’ can be bound by a quantifier phrase (QP) under certain conditions (cf. Hoji et al. 1999; Hara 2000). For instance, despite the standard observation as in (6), example (7) allows a bound variable reading of *kanozzyo*.

- (6) *Daremo_i-ga [kare_i-ga tukut-ta] omotya-o kowasi-ta.
 everyone-NOM he-NOM make-PAST toy-ACC break-PAST
 ‘Everyone broke the toy that he made.’ (Hoji 1991: 287)
- (7) [Sono ondai-ni hait-ta] zyosi gakusei-no daremo_i-ga
 that music.college-to enter-PAST female student-GEN everyone-NOM
 [kanozzyo_i-no sainoo-o mottomo yoku hikidasi-te kure-ru]
 she-GEN talent-ACC most fully bring.out-NF
 do.the.favour-NPST
 sensei-ni dea-e-ta.
 teacher-DAT meet-can-PAST
 ‘Every female student who entered that music college was able to meet a teacher who could bring out her talent to the full extent.’

Thus, in Japanese a bound variable interpretation can be obtained by using the following four means: a so-called anaphor *zibun*, a zero pronoun, an NP headed by *sono* (and its morphologically related forms) and a third person pronoun.

However, it is not the case that all of these expressions (dependent terms hereafter) can induce a bound variable reading with equal likelihood. As noted above, *zibun* and a zero pronoun can readily yield a bound variable reading,

¹ In this paper I use the following abbreviations for the glosses: ACC: accusative; COMP: complementiser; DAT: dative; GEN: genitive; NF: non-finite; NOM: nominative; NPST: non-past tense; PAST: past tense; Q: question marker; TOP: topic.

and yet a third person pronoun in Japanese does not easily allow such an interpretation. In English, too, there is a clear difference between a pronominal and *that NP*. Thus, even though *that boy* in (8a) can be construed as a bound variable, such an interpretation is quite hard or impossible for (8b). But notice that there is no such restriction in the case of a pronominal.

- (8) a. Every boy_i dates a girl who adores that boy_i. (Noguchi 1997: 785)
 b. *Every boy_i likes that boy_i's girlfriend.
- (9) a. Every boy_i dates a girl who adores him_i.
 b. Every boy_i likes his_i girlfriend.

In this paper I wish to provide an answer to the question as to why there is such a difference in the availability of a bound variable interpretation for different dependent terms. Specifically, I would like to suggest that accessibility theory proposed in Ariel (1990, 1991, 1994, and the references cited therein) for discourse anaphora can be naturally applied to the issue of a bound variable interpretation as well.

The organisation of the paper is as follows: in the following section I will provide an overview of accessibility theory. In section 3 I will present an analysis of a bound variable interpretation for different dependent terms. Due to the limitation of space, I will concentrate on Japanese data, though I will briefly touch upon other languages as well. Section 4 concludes the paper.

2. Accessibility theory

The central idea of accessibility theory is that some mental entities or representations are more readily retrievable than others in the addressee's memory, and the speaker uses different kinds of anaphoric expressions to help the addressee retrieve the mental entity (the antecedent for an anaphoric expression for our purposes) that the speaker intends in his utterance. Accessibility theory thus comprises two components: (i) what sort of mental entities are considered to be salient in the addressee's memory and hence highly accessible to her, and (ii) what kind of anaphoric expressions code high accessibility. With respect to the former, Ariel points out that the following are among the salient entities in a discourse (i.e. salient within the mind of the speaker/addressee):

- (10) Highly accessible antecedents
- a. mental representations of discourse participants (i.e. the speaker and the addressee)
 - b. discourse or sentence topic; the subject of a sentence

Additional factors contribute to the relative accessibility of an antecedent, too. For example, a short distance between an anaphoric expression and its antecedent usually makes the latter highly accessible. On the other hand, if

there are more than one potential antecedent for a given anaphoric expression, these antecedents will be in competition for anaphora resolution, which in effect makes them less accessible. Thus, the factors which affect the relative accessibility of an antecedent are as follows:

- (11) Factors affecting the relative accessibility of an antecedent
 - a. distance
 - b. competition

The other component of accessibility theory concerns what kind of anaphoric expressions code high accessibility. Based on a corpus study of a variety of texts (both spoken and written), Ariel suggests the following hierarchy (Ariel 1994: 30):

- (12) Accessibility marking scale
 - zero < reflexives < agreement markers < cliticised pronouns < unstressed pronouns < stressed pronouns < stressed pronouns + gesture < proximal demonstrative (+ NP) < distal demonstrative (+ NP) < proximal demonstrative (+ NP) + modifier < distal demonstrative (+ NP) + modifier < first name < last name < short definite description < long definite description < full name < full name + modifier

In the above hierarchy a zero form is the highest accessibility marker among all the potentially anaphoric expressions, while a full name plus a modifier is the lowest accessibility marker of all. The speaker uses a high accessibility marker when referring to a highly accessible antecedent and a lower accessibility marker for a less accessible antecedent. The addressee, then, relies on the relative degree of the accessibility marker provided by the speaker to correctly retrieve the antecedent from her memory which the speaker has intended.

Let us consider some examples as an illustration of how accessibility theory works in actual anaphora resolution. First, let us observe the following:

- (13) The feedpipe lubricates the chain, and it should be adjusted to leave a gap half an inch between itself and the sprocket. (Ariel 1994: 11; originally from Broadbent 1973)

In (13) there is more than one potential antecedent for the pronoun *it*, yet the default interpretation is that the pronoun refers to *the feedpipe* and not *the chain*. This is because the (unstressed) pronoun, a high accessibility marker, signals to the addressee to search for a highly accessible antecedent. Since the subject/topic of a sentence is more accessible than the object in a default case, *the feedpipe* is selected as the antecedent for the pronoun. Next, let us consider (14) from Ariel (1990:65).

- (14) a. Jane_i kissed Mary_j, and then she_{i/*j} kissed Harry.
 b. Jane_i kissed Mary_j, and then SHE_{*i/j} kissed Harry.

In (14b) the pronoun *she* is given stress, in which case coreference between the pronoun and *Jane* is excluded. A stressed pronoun is a lower accessibility marker than an unstressed one; hence it signals to the addressee to look for a less accessible antecedent like the object *Mary*. Accessibility theory also accounts for some of the well-known counterexamples to the standard binding theory. For instance, in the following sentences a reflexive does not have an antecedent within the sentence, and yet the first person reflexive can be used felicitously.

- (15) a. This masterpiece was written by Maya and myself/*himself.
 b. So who's advising Govorshin apart from ourselves/*themselves?
 (Ariel 1994: 35)

In accessibility-theoretic terms, the mental representations of discourse participants are among the highly accessible potential antecedents. Hence, the first person reflexive can be licensed, being anaphoric to the speaker (and the addressee), while the third person reflexive cannot be used in this way.

Following Ariel, I investigated the distribution of anaphoric expressions in a Japanese text and established a partial accessibility marking scale like the following:²

- (16) Accessibility marking scale in Japanese
zibun < zero pronouns < third person pronouns < *sono NPs*

The accessibility marking scale for Japanese is almost identical to the one Ariel proposed originally (see (12) above) except for one point. In (12) a zero form is placed as the highest accessibility marker, while in (16) it is *zibun* which occupies the highest position. As far as I know, Ariel's decision to place a zero form at the highest in the accessibility marking scale is mainly based on the behaviour of Chinese zero pronouns, and yet it does not seem likely that there has ever been an investigation with respect to the relative hierarchy between Chinese zero pronouns and *ziji* 'self'. Thus, although we need further investigation to argue conclusively, it may well be the case that an anaphor is in fact higher in the hierarchy than a zero form. At any rate, the overall congruence of the accessibility marking scales between (12) and (16) supports Ariel's claim regarding the universality of accessibility theory.

² For the analysis, I used colloquial writing that was based on the messages delivered at Sunday services at church by the author of the book: Uchida, K. (1992). *Sanjoo no sekkyoo ni miru saiwai na kurisuchan seikatsu*. Inochi no Kotoba-sha, Tokyo.

3. Accessibility theory applied to a bound variable interpretation

I wish to claim that the relative availability of a bound variable reading for different dependent terms follows from accessibility theory. Thus, in a default case the speaker selects a high accessibility marker to encode a bound variable interpretation. This is presumably due to the fact that only a very restricted syntactic configuration can license a bound variable reading (roughly, the antecedent QP needs to c-command a dependent term), and when the speaker selects an anaphoric expression to signal to the addressee that the QP is the intended antecedent in such a local domain (usually within the same sentence), he will naturally use a high accessibility marker. Moreover, the syntactic requirement of c-command for a bound variable reading makes the antecedent QP higher in the structure than a dependent term, most commonly in the spec-IP position. From the accessibility theoretic point of view, the subject position is, of course, highly accessible and a high accessibility marker will be used to establish an anaphoric relation with a DP in that position. However, if the antecedent QP is made less accessible for some reason, we predict that a lower accessibility marker can (in principle) be utilised to be anaphoric to that QP as well. We will come back to this point shortly.

We saw in section 1 that in Japanese, for instance, *zibun* and a zero pronoun can readily yield a bound variable reading. This is because they are the highest in the accessibility marking scale. Languages like Spanish and Italian have both *pro* and clitics. In these languages, then, it is these elements which are normally employed to encode a bound variable interpretation:³

(17) a. Spanish

Nadie_i cree que *pro*_i es inteligente.
 ‘Nobody believes that s/he is intelligent.’

b. Italian

Nessuno_i crede che Maria lo_i ami.
 ‘Nobody believes that Mary loves him.’

On the other hand, due to the lack of a zero or a clitic pronoun, English uses an overt pronominal and a reflexive to express the notion of a bound variable reading (the decision which form to use for a bound variable reading is regulated by binding theory):

(18) a. Every boy_i wonders what he_i will become in the future.

b. Every girl_i believes in herself_i.

As stated above, the claim that the relative availability of a bound variable reading for different dependent terms follows from accessibility theory entails that a lower accessibility marker can also be used if the antecedent QP is

³ I regard Ariel’s ‘agreement markers’ in the accessibility marking scale in (12) as the presence of *pro* in the subject position, which is responsible for a bound variable reading.

regarded as less accessible. Thus, the contrast we observed in (8), repeated here as (19), is due to the fact that a relative distance between a dependent term and its antecedent QP plays a role in judging how accessible the antecedent is. A shorter distance between the two makes it more accessible. In other words, given a lower accessibility marker like *that boy*, the addressee will search for a less accessible DP for its antecedent, and in the case of (19b) she will regard *every boy* as too prominent for *that boy* to be anaphoric to. In (19a), however, a relatively long distance between the dependent term and its antecedent makes the latter less accessible than the one in (19b), hence a bound variable reading becomes easier to obtain.

- (19) a. Every boy_i dates a girl who adores that boy_i.
 b. *Every boy_i likes that boy_i's girlfriend.
 (Noguchi 1997: 785)

In Japanese, too, I wish to claim that the reason why native speakers do not easily get a bound variable reading in cases like (20) is partly due to the fact that the antecedent QP is too prominent for *kare* to be anaphoric to.⁴

- (20) ??Daremo_i-ga kare_i-no ryoosin-ni kansya si-te i-ru.
 everyone-NOM he-GEN parents-DAT gratitude do-NF be-NPST
 'Everyone is grateful to his parents.'

In cases like (7), repeated here as (21), we saw that a bound variable reading of a third person pronoun was possible.

- (21) [Sono ondai-ni hait-ta] zyosi gakusei-no daremo_i-ga
 that music.college-to enter-PAST female student-GEN everyone-NOM
 [kanozyo_i-no sainoo-o mottomo yoku hikidasi-te kure-ru]
 she-GEN talent-ACC most fully bring.out-NF
 do.the.favour-NPST
 sensei-ni dea-e-ta.
 teacher-DAT meet-can-PAST
 'Every female student who entered that music college was able to meet a teacher who could bring out her talent to the full extent.'

With respect to (21) one may consider that if distance plays a role in the relative availability of a bound variable reading for a lower accessibility marker, (21) should not allow a bound reading of *kanozyo*, as it appears right next to the antecedent QP. I wish to claim, however, that it is the structural distance between a dependent term and its antecedent QP at LF which is crucial for the availability of a bound variable reading. As is clear from the English translation, *kanozyo* in (21) is embedded within a relative clause,

⁴ There is another factor which makes a bound variable reading of *kare/kanozyo* less easily available. We will come back to this point shortly.

hence there are a number of maximal projections intervening between the pronoun and its antecedent QP. Therefore, despite the PF proximity, *kanozoyo* can be anaphoric to its antecedent QP, which is now regarded as less accessible than cases like (20).⁵ Additional support for the LF distance can be seen in the following pair of examples.

- (22) a. *Daremo_i-ga kare_i-no hanasi-o sita.
 everyone-NOM he-GEN talk-ACC do-PAST
 ‘Everyone told his story.’
- b. ?Daremo_i-ga [kare_i-no itiban sonkei si-te i-ru] hito-no
 everyone-NOM he-GEN most respect do-NF be-NPST person-GEN
 hanasi-o si-ta.
 talk-ACC do-PAST
 ‘Everyone talked about the person he respected most.’

Note that the PF strings of (22a) and (22b) are exactly the same up to the point where the dependent term shows up (including the case particle), and yet (22b) is easier to have a bound variable reading than (22a), as the pronoun is more deeply embedded in the former than in the latter. If, however, (22b) is put into a larger context where *daremo* ‘everyone’ quantifies over the set of individuals who are the topic of discourse, then the QP is regarded as highly accessible and a bound variable reading of *kare* should become harder to obtain. This is exactly what happens in the following example.

- (23) John-to Bill-to Mike-ga atumat-te hanasi-o si-ta. Ironna
 John-and Bill-and Mike-NOM gather-NF talk-ACC do-PAST various
 koto-o hanasi-ta ga, Tom-no koto-mo wadai-ni nat-ta.
 thing-ACC talk-PAST but Tom-GEN thing-too topic-DAT become-PAST
 Sorekara, daremo-ga kare-no itiban sonkei si-te i-ru
 then everyone-NOM he-GEN most respect do-NF be-NPST
 hito-no hanasi-o si-ta.
 person-GEN talk-ACC do-PAST
 ‘John, Bill, and Mike got together and had a chat. They talked about various things and they also talked about Tom. Then everyone talked about the person he respected most.’

In (23) *John*, *Bill*, and *Mike* are the topic of discourse and the QP *daremo* quantifies over the set consisting of these three individuals. In such a case, there is a very strong preference to construe *kare* as being anaphoric to *Tom*

⁵ Although in English the PF distance mirrors the LF structural distance and it is not easy to observe the relevance of the LF distance for a bound variable interpretation, the contrast in (i) can support our claim if we assume that there is an additional VP projection for a double object construction (as has been assumed in the traditional GB-type clause structure) and hence there is more structural distance in (ib) than in (ia).

(i) a. *Every boy_i hugged that boy_i's girlfriend.
 b. Every boy_i sent that boy_i's best friend a Christmas card.

rather than as a variable bound by the QP; this is because a lower accessibility marker like *kare* signals to the addressee to search for a less accessible antecedent, in this case *Tom*, for its antecedent.

When we investigate examples of Japanese where a bound variable reading of a third person pronoun is possible, we find that they basically fall into two groups. One group consists of cases where a third person pronoun is deeply embedded within the sentence, hence the structural distance at LF is considered to be large, and the other group comprises cases where there is some modification to an antecedent QP so that the QP denotes a restricted set. The relevant examples are listed in (24) to (28).

- (24) ?Dono gakusei_i-mo[sensyuu kare_i-o suisen si-ta]
 every student-too last.week he-ACC recommendation do-PAST
 sensei-ni orei-o okut-ta.
 teacher-DAT gift-ACC send-PAST
 ‘Every student sent a gift to the teacher who recommended him last week.’ (Hoji et al. 1999: 2)
- (25) Nihonzoyosidai-no dareka_i-ga kondo-no gakusei
 Japan.Women’s.Univ.-GEN someone-NOM next.time-GEN student
 kaigi-ge kanozyo_i-no ronbun-o happyoo su-ru.
 conference-at she-GEN paper-ACC presentation do-NPST
 ‘Someone at Japan Women’s University is going to present her paper at the next student conference.’ (Aikawa 1991b: 202)
- (26) a. ??Dono hito_i-ga kare_i-no kuruma-de ki-ta-no?
 which person-NOM he-GEN car-in come-PAST-Q
 ‘Which person came in his car?’
 b. ?Dono sakka_i-ga kare_i-no kuruma-de ki-ta-no?
 which writer-NOM he-GEN car-in come-PAST-Q
 ‘Which writer came in his car?’
 c. Dono nooberusyoo zyusyoo sakka_i-ga kare_i-no kuruma-de
 which Nobel.Prize winning writer-NOM he-GEN car-in
 ki-ta-no?
 come-PAST-Q
 ‘Which Nobel Prize winning writer came in his car?’
 (Hoji 1991: 297-98)
- (27) John, Bill, Mike-no daremo_i-ga kare_i-no sensei-o
 sonkei si-te
 John Bill Mike-GEN everyone-NOM his-GEN teacher-ACC respect do-NF
 i-ru.
 be-NPST
 ‘Everyone, i.e. John, Bill, Mike, respects his teacher.’

- (28) ?Sono dansikoo-de-wa [Matsumoto sensei-ni eigo-o
 that boys'.school-at-TOP Matsumoto teacher-from English-ACC
 narat-ta] seito-no daremo-ga kare-no eigo-no
 learn-PAST student-GEN everyone-NOM he-GEN English-GEN
 zituryoku-o age-ta.
 proficiency-ACC improve-PAST
 'At that boys' school every student who learned English from Mr
 Matsumoto improved his English proficiency.'

Sentence (24) is a further example which confirms our hypothesis regarding the relevance of LF distance between a dependent term and its antecedent QP, while examples from (25) to (28) illustrate the fact that modification to the antecedent QP somehow 'improves' a bound variable reading of a third person pronoun. Particularly interesting in this regard is Hoji's observation with respect to the examples in (26): the more restricted an antecedent QP is, the easier it becomes to have a bound variable reading of *kare*.

How can we explain the phenomenon we observe in (25) to (28)? Does accessibility theory provide an answer to it? I wish to claim that the answer is yes, but before I present the analysis for it, let us first consider the nature of third person pronouns in Japanese. The point that I wish to draw attention to is the fact that Japanese *kare* and *kanozō* are specified for [+male] and [-male], respectively. Generally speaking, when we establish an anaphoric relation between two DPs, an anaphoric expression must be informationally poorer than its antecedent, or to put it differently, an anaphoric expression must not convey any new information that its antecedent does not have (see Ariel 1990: 201 and the references cited therein). Thus, the reason why the anaphoric relation in (29b) is worse than that of (29a) is because the anaphoric expression *the bus* encodes more information than its antecedent *the vehicle*.

- (29) a. The bus_i came trundling round the bend. The vehicle_i almost flattened a pedestrian.
 b. ??The vehicle_i came trundling round the bend. The bus_i almost flattened a pedestrian.
 (Ariel 1990: 201; originally from Sanford and Garrod 1981)

Now let us consider what would happen when we try to process a sentence like (20), repeated here as (30), *out of context*. Since *kare* inherently encodes the gender information [+male], which is not included in the antecedent QP *daremo*, the addressee will be inclined to search for an antecedent for *kare* which encompasses all of its information.^{6,7}

⁶ This includes not only the so-called ϕ -feature specification of *kare* [+3rd person, +singular, +male] but also the language-specific constraints like the impossibility for *kare* to be used to refer to someone with a socially higher status or a very young child (cf. Noguchi 1997: 778).

⁷ Aikawa (1991b) also observes that the gender specification for the antecedent QP is crucial for a felicitous bound variable reading.

- (30) ??Daremo_i-ga kare_i-no ryoosin-ni kansya si-te i-ru.
 everyone-NOM he-GEN parents-DAT gratitude do-NF be-NPST
 ‘Everyone is grateful to his parents.’

However, if (30) is uttered in a situation where we know from the context that *daremo* is intended to quantify over the set of men, a bound variable reading becomes easier to obtain. Thus, I wish to argue that the reason why it is possible to have a bound variable reading in cases like (25) to (28) is because it is easier to envisage what the antecedent QP quantifies over. This is clearly the case for (25), (27), and (28) where the gender specification for the antecedent QP is linguistically expressed, while in the case of (26) this is probably due to our (sexist) perception of the world that writers in general, or Nobel Prize winning writers especially, are more likely to be males.

Thus, in Japanese two factors conspire to make a bound variable reading of third person pronouns less easily available: one is that they are a lower accessibility marker, and the other is that they are specified for gender. When both of these factors are satisfied in that the antecedent QP is regarded as less accessible and the gender specification as to what the antecedent QP quantifies over is clear, a bound variable reading of *kare/kanozyo* becomes easy to obtain. Example (21) is such a case. On the other hand, when only one of the two factors is satisfied, it does become easier to have a bound variable reading compared to cases like (30) uttered out of context, and yet the reading may not be as felicitous as cases like (21).

Finally, let us consider a bound variable reading of *sono NPs* in Japanese. I have proposed at the end of the previous section that the partial accessibility marking scale in Japanese is the following:

- (31) Accessibility marking scale in Japanese
zibun < zero pronouns < third person pronouns < *sono NPs*

However, one may have some doubts about the relative ordering between third person pronouns and *sono NPs*, as *prima facie* it seems easier to have a bound variable reading with *sono NPs* than with third person pronouns. Thus, Hoji (1991) gives the following judgement.

- (32) a??Dono hito_i-ga [Mary-ga kare_i-o but-ta]-to it-ta-no?
 which person-NOM Mary-NOM he-ACC hit-PAST-COMP say-PAST-Q
 ‘Which person said that Mary hit him?’
 b. Dono hito_i-ga [Mary-ga sono hito_i-o but-ta]-to
 which person-NOM Mary-NOM that person-ACC hit-PAST-COMP
 it-ta-no?
 say-PAST-Q
 ‘Which person said that Mary hit that person?’
 (Hoji 1991: 299)

However, I would like to suggest that the reason why *sono hito* ‘that person’ seems easier to be bound than *kare* is because *sono hito* is gender-neutral and hence it does not contain any additional information that the antecedent QP does not have. Thus, the degree of acceptability of (32b) is comparable to the one in (33).

- (33) *Dono dansei-ga [Mary-ga kare-o but-ta]-to it-ta-no?*
 which man-NOM Mary-NOM he-ACC hit-PAST-COMP say-PAST-Q
 ‘Which man said that Mary hit him?’

Similarly, if we replace *sono hito* in (32b) with *sono zyosei* ‘that lady’, then a bound variable reading becomes very hard or impossible to obtain.

- (34) **Donohito-ga [Mary-ga sono zyosei-o but-ta]-to it-ta-no?*
 which person-NOM Mary-NOM that lady-ACC hit-PAST-COMP say-PAST-Q
 ‘Which person said that Mary hit that lady?’

Hence, we conclude that contrary to the observation made in the previous literature, it is not the case that *sono NPs* can yield a bound variable reading more easily than third person pronouns.

4. Conclusion

In this paper I have argued that the availability of a bound variable interpretation for different dependent terms follows from accessibility theory. In a default case the speaker chooses a high accessibility marker to encode a bound variable interpretation. This is because the antecedent QP typically occupies the subject position and hence it is regarded as highly accessible. However, if the structural distance at LF between a dependent term and its antecedent QP becomes larger, a lower accessibility marker can in principle be used to yield a bound variable reading as well. We have also seen that in Japanese third person pronouns are not easily construed as bound variables due to the conspiracy of two factors: (i) they are a lower accessibility marker, and (ii) they are specified for gender. However, when both of these factors are satisfied in that the antecedent QP is regarded as less accessible and the gender specification as to what the antecedent QP quantifies over is clear, a bound variable reading of a third person pronoun becomes easy to obtain.

Acknowledgements

I wish to thank Tanya Reinhart for suggesting me to work on accessibility theory and for her very helpful comments and discussions. I also wish to thank Mira Ariel and Eric Reuland for many insightful comments and Bill Philip for judgements on English.

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