Specificity Effects in Japanese*

YOICHI MIYAMOTO
Osaka University/M.I.T.

YUKA IIMIMA
Josai International University

1. INTRODUCTION
It is well known that there is a contrast between (1a) and (1b):

(1) a. Who did you see a picture of t_i?
   b. *Who did you see every picture of t_i?

The only difference between these two examples is that the object NP is non-specific in (1a) whereas (1b) contains a specific object NP. We will call this prohibition of the extraction of a phrase out of the specific nominal, exemplified in (1b), "specificity effects" in this paper. We believe that the various accounts that have been proposed for the contrast exemplified above can be subcategorized into three types, which we will introduce below. The goal of this paper is to examine which of these three types of approaches best accommodates the Japanese language. For this purpose, this paper takes the following steps. First, we will create a specific indefinite context in Japanese. Then, we will either extract an operator (Op) or scramble a phrase out of this specific indefinite context, and we will examine whether any marginality results. Based on the conclusion reached, we will also briefly discuss a possible implication of our analysis for the acquisition of English as a foreign language by adult native speakers of Japanese.

2. PREVIOUS ACCOUNTS AND THEIR PREDICTIONS
In this section, we will introduce the essence of the three major lines of approaches for specificity effects, each followed by its major prediction concerning the Japanese language.

2.1. Position Approach
Mahajan (1992) best represents the first approach, which will be called 'the position approach' in this paper. Mahajan argues that specificity effects are reduced to the Condition on Extraction Domain (Huang 1982). Under this

* We would like to thank Noam Chomsky, Danny Fox, Sandra Ingram, and William Synder for valuable comments and suggestions. This research was supported in part by a grant-in-aid for scientific research from the Ministry of Education in Japan and a Fulbright research grant, both awarded to the first author.
analysis, the object of (1a) stays inside the VP while that of (1b) occupies AGROP SPEC, as illustrated in (2a) and (2b) respectively.¹

(2)  
a. Who₁ did you [v see [n/p a picture of t₁]]  
b. *Who₁ did you [AGROP [n/p every picture of t₁]₂ [v see t₂]]

In (2b) since AGROP SPEC is not a properly-governed position, if who is extracted out of the object NP occupying this position, CED is necessarily violated. Therefore, the ungrammaticality of (1b) results. In contrast, the object stays in the properly governed position in (2a), and therefore, the extraction of who does not result in a CED violation in this case. Thus, the grammaticality of (1a) is correctly predicted.

Here is a prediction that this approach makes. Languages that allow the extraction of a phrase out of the subject position violate the CED as well. Therefore, these languages are not subject to specificity effects, either.

It has been observed (e.g., Lasnik and Saito 1992) that Japanese does not show subject condition effects. There is no obvious contrast between the extraction of a phrase out of the subject and the extraction of a phrase out of the object in this language. Then, this approach predicts that Japanese does not show specificity effects.

2.2. Structure Approach

Bowers (1988) and Karimi and Lobeck (1998) argue that specificity is understood as a property of D. We will dub this approach 'the structure approach' in this paper. Here we introduce Bowers's mechanism for illustration.² According to Bowers, non-specific nominals are NP whereas specific nominals are DP. Therefore, the object NP of (1a) is as in (3a), and that of (1b) as in (3b):

(3)  
a. [n/p a [n/p picture of who]]  
b. [d every [n/p picture of who]]

Then, within the Barriers framework (Chomsky 1986), Bowers argues that DP creates a barrier for the extraction of a phrase (who in [3b]) out of this DP, which results in the ungrammaticality of (1b). Since DP is absent in (3a), who can be freely extracted, and thus, (la) is grammatical. Therefore, the contrast between (la) and (lb) results.

¹ In order to avoid any unnecessary complications, we do not illustrate the raising of the predicate to T throughout the paper.
The prediction of this approach is that, unlike the position approach, regardless of what triggers movement, movement in general shows specificity effects if the nominal is DP. As far as the Japanese language is concerned, scrambling and Op-movement should equally show specificity effects.

2.3. Condition Approach
The third approach is to postulate a condition on specificity effects, which prohibits traces/variables from appearing in a specific nominal (e.g., Erteschik-Shir 1973, Fiengo and Higginbotham 1981). We will call this approach 'the condition approach' in this paper.

This approach also predicts that Japanese exhibits specificity effects. However, unlike the structure approach, scrambling and Op-movement are not necessarily expected to behave in the same way since this approach looks at "final products." We know independently (Saito 1989, 1992) that scrambling can be undone, and therefore, it is not surprising that scrambling and Op-movement behave in a different way with respect to specificity effects.

3. COMPARATIVE DELETION IN JAPANESE
Let us now introduce comparative deletions (CDs) in Japanese, a representative of Op-movement in this language. This sub-section is intended to give the reader a brief introduction of CDs in Japanese. However, our discussion will be short, and therefore the reader is encouraged to refer to the references cited.

Kikuchi (1989) argues convincingly that in Japanese CDs, as exemplified in (4), Op-movement is involved within the Japanese counterpart of the than-clause, which is indicated by the underlining in this example and also in (5 a, b).

(4) Taroo-wa [Hanako-ga katta yori(-mo)] takusan(-no) hon-o katta.
    -top -nom bought than many(-gen) book-ace bought

"Taroo bought more books than Hanako bought."

Ishii (1991) further examines the properties of the Op moving in the than-clause. One property of CDs that Ishii gives and that is of particular interest to this paper is the contrast between (5a) and (5b):

(5) a. *kono kurasu-dewa [eigo-ga umai yori(-mo)] takusan-no hito-ga huransugo-ga umai.
    this class-in-top English-nom good than many-gen people-nom French-nom good

"More people are good at French than are good at English in this class."

b. kinoo-no kaigi-dewa [eigo-o hanasita yori(-mo)] takusan-no hito-ga huransugo-o hanasita
    yesterday-gen meeting-in English-ace spoke than many-gen people-nom French-ace spoke

"More people spoke French than spoke English in yesterday's meeting."
The crucial difference between (5a) and (5b) is that the former contains an individual-level predicate umai 'good' as a main predicate, whereas the latter contains a stage-level predicate hanasu 'speak.' The former is less acceptable than the latter.\(^3\)

Ishii further observes that this stage-level/individual-level contrast of predicates can be found in another construction; namely, sentences with a floating quantifier (FQ). Observe the contrast between (6a) and (6b):

(6) a. *gakusei-ga san-nin eigo-ga umai.  
   student-nom three-cl English-nom good  
   "Three students are good at English."

b. gakusei-ga san-nin eigo-o hanasita.  
   student-nom three-cl English-ace spoke  
   "Three students spoke English."

Here, too, when the main predicate is individual-level, the sentence is degraded, but if it is stage-level, no marginality results.

Observing the same contrast with respect to the stage-level/individual-level predicates in examples (5) and (6) (among other pieces of evidence), Ishii concludes that the Op moving in the than-clause is a covert FQ. Accordingly, the structure of the than-close in (4) is as in (7):\(^4\)

(7) \([\text{CP} \text{ Op}]_1 [\text{TT} \text{Hanako-ga Covert Object} \ t_1 \ \text{katta} \ yori(-mo)])

The structure of the i/zo-o-clause in (5a) and (5b) are as in (8):

(8) \([\text{CP} \text{ OP}_1 [\text{TT} \text{Covert Subject} \ t_1 \ \text{eigo-ga/o umai/hanasita} \ yori(-mo)])

To summarize the discussion, we have established that the examination of the properties of the Op in the than-clause is equal to the examination of the properties of a FQ in the FQ construction. In other words, these constructions are basically the same. Bearing this structural parallelism between the than-clause and the FQ construction in mind, let us turn to the availability of specific and nonspecific interpretation in these constructions.

\[^3\text{See Carlson (1977), Kratzer (1995), Diesing (1992), among others, for the stage-level and individual-level distinction of predicates.}\]

\[^4\text{Here we leave aside many questions regarding the status of the null subject/object appearing as a modifiée of the FQ. We leave this issue for future research.}\]
4. DATA TO BE EXAMINED
4.1. Partitive vs. Existential Interpretation

Because of the space limitation, we will concentrate on (5a) and (6a), repeated here as (9a, b). As you will see below, these two examples are crucial in determining which of the three approaches introduced in Section 2 best accommodates the Japanese language.

(9)  a. ?*kono kurasu-dewa [eigo-ga umai vori(-mo)] takusan-no hito-ga hurunsugo-ga umai.
    this class-in-top English-nom good than many-gen people-nom French-nom good
    "More people are good at French than are good at English in this class."

    b. gakusei-ga san-nin eigo-ga umai.
    student-nom three-cl English-nom good
    *Three students are good at English.
    Three of the students are good at English

Let us start with (9a). Since this example is ungrammatical, neither specific nor non-specific interpretation is available. It is worth noting at this point that this example without the than-clause is grammatical, but it allows only the specific interpretation, as shown in (10).

(10)  kono kurasu-dewa) takusan-no hito-ga hurunsugo-ga umai.
    this class-in-top many-gen people-nom French-nom good
    "Many (specific) people are good at French (in this class)."

Thus, it seems conceivable that in (9a), if the than-clause is interpreted non-specifically, some semantic conflict between the matrix clause and the than-clause may result. Even if this is correct, the unavailability of the specific interpretation in (9a) is quite surprising. Furthermore, the grammaticality of (10) suggests that the lack of this interpretation must be due to a factor inside its than-clause.

In contrast to (9a), in (9b), although the non-specific interpretation is unavailable as discussed above, the partitive interpretation, namely the specific interpretation, is available.

Then, the questions to be addressed are as follows. Despite the structural parallelism between the than-clause and the FQ-construction described in Section 3, why is specific-interpretation available only in the FQ construction (and also in [10])? And why is non-specific interpretation unavailable both in the CD and the FQ construction (and also in [10])? We will attempt to answer these questions in Section 5 and 6.

4.2. FQ-Scrambling

Here, for a reason to become clear in Section 6, we would like to introduce one additional fact about (9b); namely, the FQ of (9b) can be scrambled to
the sentence-initial position. In (11), to clearly show the effects of scrambling, we add the topic phrase  
konokurasu-dewa 'in this class' sentence-initially. Also, to make this sentence more informative, thus more natural, the subject NP gakusei is changed to dansi-gakusei 'male student.'

    this class-in-top male-student-nom three-cl English-nom good
    "In this class, three of the male students are good at English."

Even when the FQ is scrambled to the sentence-initial position, the sentence remains grammatical, and the specific interpretation still holds.

(12) san-nin, kono-kurasu-dewa [Npdansi-gakusei-ga t_i] eigo-ga umai.

5. SO-CALLED FLOATING QUANTIFIERS: MIYAMOTO’S (1994) HYBRID HYPOTHESIS
Let us take a closer look at (9a, b). We start with (9b), which builds a basis for our discussion on (9a) in Section 6. This section is basically a short summary of Miyamoto’s (1994) hybrid hypothesis of FQs which states that FQs can be either secondary predicates or modifiers inside NP. This hybrid hypothesis is shown to provide an answer as to why only the specific interpretation is available in (9b).

Miyagawa (1989) and Ueda (1986) convincingly show that Japanese FQs are secondary predicates. If so, it is not unnatural that they are subject to the same restriction(s) that secondary predicates in general follow. One of the restrictions for secondary predicates which is relevant for our purpose can be illustrated with (13a-d) (Rapoport 1991):

(13)a. *John is happy left-handed.  c. *John is intelligent left-handed.
b. *John is intelligent tired.   d. John is happy tired.

The contrast between (13a-c) and (13d) shows that in a sentence containing a secondary predicate, both the main and the secondary predicate must be stage-level.

Whatever the correct analysis of the contrasts in (13) may be, if Japanese FQs are secondary predicates, it is natural that they are subject to

---

5 Miyagawa (1989) argues that the scrambling of a FQ modifying the subject to the sentence-initial position is not permitted in general. However, it seems reasonable that locative phrases like kono kurasu-dewa in (11) are treated in the same way as Miyagawa analyzes temporal adverbials. If this is so, the grammaticality of (12) is not necessarily problematic for his original proposal.

6 See Miyamoto (1994) for detailed discussion of the hybrid hypothesis.
the same constraint. If this is the case, it is predicted that in a sentence containing a FQ, the main predicate must be stage-level. Notice that this follows whether or not Japanese FQs are considered stage-level or individual-level. As we have observed in (13b, c), whether or not a secondary predicate is stage-level or individual-level, these examples are ungrammatical in any event.

Interestingly, this prediction is not borne out. (9b), repeated here as (14), is a case in point. In (14) the main predicate umai, which is an individual-level predicate, co-occurs with the FQ san-nin, and still, this example is grammatical on the specific interpretation, as mentioned in Section 4.1.

(14) gakusei-ga san-nin eigo-ga umai.
student-nom three-cl English-nom good
"*Three students are good at English."
"Three of the students are good at English."

Given the assumption that Japanese FQs are secondary predicates, we are then, led to conclude that the apparent FQ in (14) is not a secondary predicate, but something else. In this respect, the contrast between (15a) and (15b) is quite telling.

(15) a. *That man is intelligent happy.
b. That happy man is intelligent.

As we have already seen in (13b), even when the secondary predicate itself is stage-level, the sentence is ungrammatical if the main predicate is individual-level. By the same token, (15a) is ungrammatical. In contrast, if the same predicate appears inside NP as a modifier, the sentence becomes grammatical, as shown in (15b).

Thus, it is quite natural to hypothesize that the FQ of (14) is a modifier inside the NP (Ueda 1990), as illustrated in (16), and thus, the constraint for secondary predicates illustrated in (13) is not relevant for (14):

(16) \[NP[NPGakusei][opsan-nin]]

Assuming, following Diesing (1992), that the subject of an individual-level predicate is base-generated in TP SPEC, we assign the structure in (17) to (14):

(17) \[TP[NP[NPGakusei][opsan-nin]][APEigo-gaumai]T]

Given (17), we now receive a straightforward answer as to why (14) allows only the specific interpretation under the Mapping Hypothesis
(Diesing 1992). This hypothesis states that material from a predicate (AP in [17]) is mapped into the nuclear scope and material from TP is mapped into the restrictive clause. This means that material outside of a predicate is necessarily interpreted presuppositionally or specifically. Crucially, it cannot receive an existential interpretation. Then, since the subject NP with the FQ is located outside of the predicate in (17), this subject is necessarily interpreted specifically in (14).

6. COMPARATIVE DELETION
Bearing the analysis of (9b) in mind, let us now turn to (9a). Since, as discussed in Section 4.1, the lack of the specific interpretation in this example is due to a factor inside its than-clause, let us examine the than-clause of (9a), repeated here as (18), in detail.

(18)  [(Covert Subject Op eigo-ga umai] yori(-mo)]
      English-nom good than

Recall our conclusion in Section 3 that (14) and (18) are of the same construction. In Section 5, we have shown that (14) has the structure given in (17). Then, it is logical that we also assign the structure given in (17) to (18), as shown in (19):

(19)  [CP[TP[NP covert subject] Op][Apeigo-ga umai T] yori(-mo)]

Below the TP-level, the structure provided in (19) is exactly the same as the one in (17). The only difference between these two structures is that in the former, the subject NP and the FQ are covert, whereas in the latter they are overt. In (19) the Op is raised out of the NP to CP SPEC. It is important to notice here that given the analysis presented for (14) in Section 5, this NP is necessarily specific. Therefore, the non-specific interpretation is already excluded in (18). Then, what we have seen in (19) is an instance where the Op is extracted out of a specific nominal in Japanese. Notice that the grammaticality of (14) shows that the structure given in (19) itself is not a problem. Thus, the most plausible factor for the ungrammaticality of (9a), we believe, is the extraction of the Op out of this specific NP.

At this point, the scrambling fact introduced in Section 4.2 suggests a direction we should take to account for the ungrammaticality of (9a). The

---

7 See Tsai (1994) for the notion "predicate" (not necessarily VP) relevant to the Mapping Hypothesis.

8 The same analysis as we applied for (14) extends to (10).
important fact to recall is that from the very same position that the Op occupies in (19), the FQ san-nin can be scrambled to the sentence-initial position, as shown in (12), repeated here as (20):

(20) san-nin₁ kono-kurasu-dewa [NPdansi-gakusei-ga t₁] eigo-ga umai.

Given the grammatical contrast between (9a) and (20), the generalization to be accounted for is that the extraction of the Op out of a specific nominal must be excluded, however, scrambling of a phrase (the FQ san-nin in [20]) is possible from the same environment. As seems quite reasonable, we interpret this generalization as (I) Japanese shows specificity effects, and (II) only the Op-movement shows specificity effects. Given that our interpretation is correct, this comparison clearly leads to the conclusion that the position approach and the structure approach are not tenable and that the condition approach is the only one that is consistent with its prediction. We, therefore, take our data from Japanese as further support for the condition approach to specificity effects.

Before closing this section we will recapitulate our analysis for (18), thus (9a), and (20). As for (18), the Op will be raised to CP SPEC from the position inside the specific NP, as shown in (21):

(21) \([_{\text{CP}}\text{Op}]_{\text{TP}}[\text{NP}\text{Subject } t₁] \left[\text{...}\right](\text{yori-mo})\] ⇐ Specificity Condition violation

Then, the trace left behind inside this specific NP violates the Specificity Condition. Hence, ungrammaticality results in (9a).

On the other hand, it is proposed in Saito (1989, 1992) that scrambling can be undone. Whatever the correct analysis of this undone/reconstruction process would be, the crucial point here is that the FQ can be interpreted as if it has never been extracted from this specific NP. Then, unlike the Op-movement, it can be assumed that in (20) there is no trace inside this specific NP by the time the Specificity Condition applies. Therefore, the Specificity Condition will not be violated in this example, resulting in its grammaticality.

To sum up, the Specificity Condition is necessary to capture specificity effects in Japanese, and the contrast between the Op-movement and the scrambling with respect to the presence/absence of specificity effects naturally follows from an independently-motivated property of scrambling in Japanese.
7. A POSSIBLE IMPLICATION FOR L2 ACQUISITION
We conducted a pilot study to investigate whether Japanese EFL learners correctly reject sentences like (22)\(^9\):

(22) How many\(_1\) do you think \([_{\text{CP}_{\text{NP}}_{\text{1}}} \text{students}] \) are intelligent?  
(cf. How many students\(_1\) do you think \([_{\text{CP}} \text{are intelligent}]\)?)

Surprisingly, 44\% of the responses by our elementary EFL subjects indicates their over-acceptance of sentences of this type. The question to be addressed then is why they did so. We would like to suggest one possible account for this fact based on our proposal in the previous sections. Under our proposal, in (22), since the embedded predicate is individual-level, the embedded subject and how many constitute the structure in (23a) or the one in (23b) (see [16]).

(23) a. \([_{\text{NP}} \text{[\text{OP} how many]} \text{students}]\)  
b. \([_{\text{NP}} \text{[\text{NP}}_{\text{students}} \text{[\text{OP} how many]}])\)

In addition, this NP is necessarily specific for the reason discussed in Section 5. Then, if the movement of how many to the sentence-initial position had been a real WH-movement in (22), our subjects should have rejected this example, parallel to (9a), due to the Specificity Condition. This is contrary to our finding. Therefore, we are led to conclude that the subjects' WH-movement is of a type that does not violate the Specificity Condition. This, in turn, indicates that the NP is no trace inside the embedded subject NP when this condition applies. This amounts to saying that the WH-movement is like scrambling. If so, it is not surprising that the elementary EFL subjects incorrectly accepted (22), as they would accept (20).

8. CONCLUDING REMARKS
Examining the data from Japanese, this paper provides support for the condition approach to specificity effects (e.g., Erteschik-Shir 1973, Fieno and Higginbotham 1981). We also suggest, based on the results of a pilot study, that apparent WH-movement can be scrambling in the grammar of Japanese elementary EFL learners.

REFERENCES

\(^9\) See Iijima (2001) for the details of this experiment.


