Humanness and the kind-level interpretation

Humanness and the Kind-Level Interpretation

Nobuhiro Kaga

0. This paper will deal with the two superficially unrelated
phenomena which, however, show an interesting parallelism in a
respect: one involves the Japanese quantifier-floating construc-
tion and the other the English <u>wh</u>-question. In the two con-
structions we can observe a parallel variation in grammaticality
which seems to link up with the semantic type of the relevant
NP. A little more specifically, under some circumstances the
NP which possesses the semantic feature of [+human] produces
ungrammaticality whereas the NP of [-human] makes the same
sentence pattern perfectly acceptable. In this paper I will
propose to account for this difference in acceptability in terms
of the possibility of the <u>kind</u>-level interpretation in the sense
of the term that is often contrasted with <u>individual</u>. Further-
more it is suggested that the fact that the kind-level construal
is generally possible for [-human] NPs, but not for [+human]
NPs, might come from some cognitive factor.

1. Japanese has "numeral"-floating constructions like (1a-b),
both of which are perfectly grammatical.[1]

> (1) a. Hanako-ga sake-o   nihon   nonda.
>   'Hanako-Nom sake-Acc two bottles drank'
>   "Hanako drank two bottles of sake."
>   b. Hanako-ga otoko-o futari   nagutta.
>   'Hanako-Nom man-Acc two people hit'
>   "Hanako hit two men."

As Watanabe (1990) reports, however, the relative sentences in
(2a-b) which are constructed by making the relative heads out of

the object host NPs from which numeral quantifiers have floated
exhibit a sharp distinction in acceptability.[2]

> (2) a. [[Hanako-ga e_i nihon   nonda] sake$_i$]-wa
>   'Hanako-Nom   two bottles drank sake -Top
>   totemo oishi soodatta.
>   very   tasty seemed'
>   "(lit.) The sake which Hanako drank two bottles (of
>   it) seemed very tasty."
>   b. *[[Hanako-ga e_i futari   nagutta] otoko$_i$]-wa
>   'Hanako-Nom   two people hit   man   -Top
>   hansamu   datta.
>   handsome Cop'
>   "(lit.) The men who Hanako hit two (of them) were
>   handsome."

Likewise, the floating constructions in (3a-b), in which
numerals move from the NPs in the form of <u>sono</u> (that) + N, are
evidently different in acceptability.

> (3) a. Hanako-ga [sono tori]-o sanwa   katteiru.
>   'Hanako-Nom that bird-Acc three birds keep'
>   "(lit.) Hanako keeps three of that bird."
>   b. *Hanako-ga [sono isha]-o   sannin   shitteiru.
>   'Hanako-Nom that doctor-Acc three people know'
>   "(lit.) Hanako knows three of that doctor."

The difference in grammaticality between (2a) and (3a), on the
one hand, and (2b) and (3b), on the other, seems to be at-
tributed to the selection of the host NP from which numeral
quantifiers float, since the other parts of the constructions in
(2)-(3) are roughly equivalent. What is, then, the property
that distinguishes the host NPs in (2a) and (3a) from those in
(2b) and (3b)? It seems to be the humanness. The host NPs in
the former constructions are [-human] (<u>sake</u> 'sake' and <u>tori</u>

'bird'), while those in the latter are [+human] (otoko 'man' and
isha 'doctor'). This analysis can be confirmed by several other
data quoted in (4)-(5), which include [-human] and [+human] host
NPs respectively.

(4) a. [[Taro-ga eᵢ nihiki   tabeta] sakanaᵢ]-wa ima-ga
       'Taro-Nom   two fish ate   fish   -Top now-Nom
       shun   da.
       in season Cop'
       "(lit.) The fish which Taro ate two (of it) is now
       in season."
    b. Maruzen-ga   [sono hon]-o   jussatsu
       'Maruzen-Nom   that book-Acc ten copies
       shiireta.
       got in stock'
       "(lit.) Maruzen got in a stock of ten of that book."
(5) a. *[[Taro-ga eᵢ sannin   damashita] gakuseiᵢ]-wa
        'Taro-Nom   three people cheated   student -Top
        boku-no tomodachi da.
        my   friend   Cop'
        "(lit.) The students who Taro cheated three (of
        them) were my friends."
    b. *Taro-ga [sono onna]-o   juunin   yatotta.
       'Taro-Nom that woman-Acc ten people hired'
       "(lit.) Taro hired ten of that woman."

Interestingly enough, we can find in the English interroga-
tive construction a parallel variation in acceptability depend-
ing on the humanness of the WH-phrase. Compare the sentences in
(6).

(6) a. What is in every room?
    b. #Who is in every room?

To the question in (6a) we can answer, for example, "There is an

old desk in every room." On the other hand, we have no appropriate way to answer the question in (6b). An answer such as "John is in every room." is impossible because John cannot exist simultaneously at more than one place, let alone in "every" room, unless he is an omnipresent being like God. An answer like "A beautiful lady is in every room." is also inappropriate because the interrogative phrase who, unlike what, seems to demand as its answer an expression with rather firm referentiality, and a phrase like a beautiful lady in the above answer is not specific enough to meet this requirement. Thus (6b) is an unacceptable question in contrast to the well-formed (6a).[3]

A similar observation can be made on the basis of the following examples as well.[4]

(7) a. What did every girl read?

b. Who did every girl dance with?

(7a-b) are different in that what in (7a) can take a so-called narrow, as well as wide, scope with respect to every girl, while who in (7b) permits only a wide scope reading. One can answer the question in (7a) by saying, for example, "Every girl read a newspaper", in a situation in which some girl read, say, today's Asahi Shinbun, another girl read Yesterday's Mainichi Shinbun, still another read the day before yesterday's Yomiuri Shinbun, and so on. This is a narrow scope reading for what. On the other hand, who in (7b) lacks this type of reading[5]; the existence of a specific person, say John, who every girl danced with is required to answer the question in (7b). This wide scope reading is available here because it is possible that each girl danced with a specific person at a different time. Thus (7b) can be a grammatical sentence unlike the unacceptable (6b), but exhibits only a limited possibility of interpretation as compared with (7a).

2. In the preceding section we have observed that [+human] NPs

are more limited in their syntactic or semantic distribution
than [-human] NPs: The former are ruled out in some environments
(i.e., certain quantifier-floating constructions and WH-
quantifier sentences) in which the latter can occur grammati-
cally or have an acceptable interpretation. This behavioral
difference between [+human] and [-human] NPs should be con-
sidered to come from some very general property of language, not
from some factors specific to particular constructions, in view
of the fact that the contrast in question can be observed in
such diverse constructions as Japanese quantifier floating sen-
tences and English WH-questions.

I suggest that that general property be something like the
following:

> (8) In certain environments, an interpretation as a <u>kind</u>-
> denoting expression is possible for [-human] NPs, but
> not for [+human] NPs.

Here <u>a</u> <u>kind</u> is used as a concept that should be contrasted with
<u>an</u> <u>individual</u> or <u>a</u> <u>token</u>. An individual is a thing or person
with a certain kind of spatial and temporal integrity; on the
other hand, a kind is a category which includes as its members
individuals with certain extent of similarity (see Carlson
(1980), Jackendoff (1983) and others for relevant discussion).
In sentence (9), for example, <u>Pochi</u> refers to an individual and
<u>a</u> <u>clever</u> <u>dog</u> represents a kind.

> (9) Pochi is a clever dog.

In short, kinds and individuals have the relationship of <u>is</u> <u>an</u>
<u>instance</u> <u>of</u> or <u>is</u> <u>exemplified</u> <u>by</u>: an individual is an instance
of a kind and, conversely, a kind is exemplified by an in-
dividual (Cf. Jackendoff (1983)).

With rough definitions of kinds and individuals like these
in mind, let us return to the data observed in section 1. My

suggestion is that [-human] NPs like <u>sake</u> in (2a), <u>tori</u> in (3a),
<u>sakana</u> in (4a), and <u>hon</u> in (4b) can be interpreted as repre-
senting a kind, whereas [+human] NPs like <u>otoko</u> in (2b), <u>isha</u> in
(3b), <u>gakusei</u> in (5a), and <u>onna</u> in (5b) cannot be assigned such
an interpretation. This contrast is easy to see in the con-
struction of (3a-b) in which quantifier floating has taken place
from the NP in the <u>sono</u> + N form. <u>Sono</u> <u>tori</u> 'that bird' in (3a)
does not refer to a bird as an individual. This is obvious from
the fact that (3a) states that Hanako keeps <u>three</u> birds in ac-
tuality. Rather this phrase is interpreted as expressing a kind
of bird, for example, a parrot as a species. And this construal
as a kind enables the floating quantifier <u>sanwa</u> to have a proper
interpretation in which what Hanako keeps is <u>three</u> <u>individuals</u>
of a certain <u>kind</u> of bird, or, three parrots for short. On the
other hand, <u>sono</u> <u>isha</u> 'that doctor' in (3b) cannot be inter-
preted as representing a kind of doctor, say, a pediatrician,
but it refers to a doctor as an individual, as in "kinoo machi-
de [sono isha]-ni atta." '(I) met that doctor on the street yes-
terday.' This is why (3b) is ungrammatical. That is, in (3b)
the floating quantifier <u>sannin</u> 'three people' cannot be assigned
any proper interpretation, since the host NP <u>sono</u> <u>isha</u>, being
[+human], cannot have an interpretation as a kind-denoting ex-
pression which would license the proper construal of <u>sannin</u> as
above, and though <u>sono</u> <u>isha</u> can be construed as referring to a
doctor as an individual, this reading is semantically incom-
patible with <u>sannin</u>. Our reasoning here predicts that if <u>sono</u>
<u>isha</u> is changed into an expression like <u>sono</u> <u>te</u> <u>no</u> <u>isha</u> which
necessarily represents a kind just because of its lexical mean-
ing, the sentence revives. This prediction is borne out by an
example like (10), in which the quantifier <u>sannin</u> can be
properly interpreted:

(10) Hanako-ga [sono te   no isha]-o   sannin
      'Hanako-Nom that kind of doctor-Acc three-people

shitteiru.

know'

"Hanako knows three doctors of that kind."

The same account holds for (4b) and (5b) as well. (4b) is grammatical because sono hon 'that book', being [-human], can be interpreted as representing a kind of book, say, Semantics and Cognition,[6] and this enables the floating quantifier jussatsu 'ten copies' to have an acceptable interpretation like "ten copies of Semantics and Cognition." On the other hand, (5b) is ungrammatical because the [+human] sono onna 'that woman' cannot be taken as expressing a kind, and thus the floating quantifier juunin 'ten people' cannot be assigned any proper interpretation. When sono onna is replaced by sono te no onna, as in (11), the sentence becomes acceptable, as predicted.

(11)   Taro-ga   [sono te   no onna]-o   juunin
       'Taro-Nom   that kind of woman-Acc ten-people
       yatotta.
       hired'
       "Taro hired ten women of that kind."

Next, turn to the relative constructions in (2a-b), (4a), and (5a). The grammatical contrast between (2a) and (2b) also seems to be connected with the fact that the [-human] NP sake in (2a) can be interpreted as representing a kind, while the [+human] NP otoko in (2b) cannot. In (2a) the NP [[Hanako-ga nihon nonda] sake] represents a kind or, more appropriately, a brand of sake, for example, Kizakura (a Japanese sake brand). It is that kind of sake in general, not the two particular bottles of sake which Hanako drank, that (2a) states seemed very tasty. It is instructive here to compare (2a) with (12), which is different from (2a) in that the quantifier nihon is contained in the relative head rather than within the relative clause.

(12) [[Hanako-ga e₁ nonda] nihon   no sake₁]-wa
      'Hanako-Nom   drank two bottles of sake -Top
      totemo oishi soodatta.
      very   tasty seemed'
      "The two bottles of sake which Hanako drank seemed
       very tasty."

In (12) the NP [[Hanako-ga nonda] nihon no sake] need not be in-
terpreted as representing a brand, say, Kizakura. It can denote
two different brands of sake or the two particular bottles of
sake which Hanako drank. The difference between the (2a) and
(12) constructions becomes explicit by using a predicate like
nurui 'lukewarm' which exhibits only an accidental property of
sake.

(13) a.??[[Hanako-ga e₁ nihon   nonda] sake₁]-wa
         'Hanako-Nom   two bottles drank sake -Top
         nurukatta.
         was lukewarm'
         "(lit.) The sake which Hanako drank two (of it)
          was lukewarm."
     b. [[Hanako-ga e₁ nonda] nihon   no sake]-wa
         'Hanako-Nom   drank two bottles of sake -Top
         nurukatta.
         was lukewarm'
         "The two bottles of sake which Hanako drank was
          lukewarm."

The NP [[Hanako-ga nihon nonda] sake] represents a kind. Thus
it is compatible with a predicate like oishii which exhibits an
"intrinsic" property applicable to kinds, but not with a predi-
cate like nurui which describes an "extrinsic" temporary state
of individuals. On the other hand, the NP [[Hanako-ga nonda]
nihon no sake] can represent both kinds and individuals. Ac-
cordingly it is compatible with both kinds of predicate just

mentioned.

Let us turn to a relative NP including the [+human] head.
Consider the sentence in (14), which does not contain a numeral
quantifier in the relative clause, unlike (2b), and thus is per-
fectly grammatical.

(14) [[Hanako-ga e_i nagutta] otoko]-wa hansamu datta.
      'Hanako-Nom   hit   man   -Top handsome Cop'
      "The man who Hanako hit was handsome."

The relative NP in (14) cannot represent a kind in a parallel
way that sake in (2a) does. Suppose, for example, that the man
who Hanako hit was a twenty-year-old person from Hokkaido. But
sentence (14) can never be interpreted as claiming that twenty-
year-old men in general were handsome or that men from Hokkaido
in general were handsome. What (14) conveys is nothing more
than the information that the particular man who Hanako hit was
handsome.

In this way, [+human] and [-human] NPs behave contras-
tively, as posited in (8). It is this contrast that accounts
for the difference in grammaticality between (2a) and (2b).
Recall from the discussion of the quantifier floating from the
NP in the sono + N form that for floating numerals to be inter-
preted, the host NPs must represent a kind; in other words, if
the host NPs denote particular individuals, floating numerals
cannot be licensed. The same is true for the case under con-
sideration. In relative constructions like (2a-b), let us as-
sume that the head NP and the co-indexed empty category (e_i)
contained within the relative clause share the same interpretive
feature(s). Then, in (2a) the empty e inherits an interpreta-
tion as a kind-denoting expression from the [-human] head sake,
while in (2b) the empty e_i shares an interpretation as an
individual-referring expression with the [+human] head otoko.
Therefore, in (2a) the floating numeral quantifier nihon can be
properly interpreted through connecting with the empty category

which is taken as representing a kind, but in (2b) the floating
quantifier <u>futari</u> cannot find an appropriate host to depend on
because the empty category has the status of an individual-
referring expression which is unable to license the floating
quantifier. Hence the grammaticality of (2a) and the ungram-
maticality of (2b).

Exactly the same explanation applies to (4a) and (5a). In
(4a) the [-human] head <u>sakana</u> represents a kind of fish, say,
rainbow trout. The co-indexed empty e_i inherits that inter-
pretation and licenses the floating numeral quantifier <u>nihiki</u>.
In (5a), on the other hand, the head NP <u>gakusei</u>, being [+human],
denotes particular individuals. This interpretation is trans-
mitted to the co-indexed empty e_i and thus the floating quan-
tifier <u>sannin</u> has no appropriate host NP. Hence (4a) is per-
fectly grammatical, but (5a) is ungrammatical.

Our factual observation above is that the relative con-
struction whose head is [+human] does not permit the presence of
a floating quantifier within the relative clause, as seen in
(2b) and (5a). There is an apparent counterexample to this,
however. Consider sentence (15):

(15) [[[sono kaisha]-ga mainen e_i futari
        'that company-Nom every year   two people
      saiyoosuru] hishoka-no   josei]-wa
      hire   the secretarial section-of lady -Top
      totemo kirei   da.
      very   beautiful Cop'
      "(lit.) The ladies in the secretarial section who
        that company hires two (of them) every year are
        very beautiful."

(15) seems to me perfectly grammatical. This sentence is the
same in its syntactic structure as the ungrammatical (2b) and
(5a), but differs from them in that (15) is a generic-like sen-
tence. The important point is that this genericity of the sen-

tence gives the head NP <u>hishoka-no</u> <u>josei</u> a property of representing a kind or class. It is a class of ladies, i.e., ladies belonging to the secretarial section in general, not some particular secretaries, that (15) claims are very beautiful. Thus the floating quantifier <u>futari</u> within the relative clause can be properly interpreted because the host empty e_i inherits the class-level interpretation from the head NP. Sentence (15) is, therefore, not a real counterexample to our analysis at all. In this case, although the kind-level interpretation that is needed for licensing floating quantifiers is not given by the nature of the head NP (<u>josei</u> is [+human]), it comes instead from the genericity of the whole sentence. It is why sentence (15) is grammatical.

Finally, the difference in acceptability between the English WH-questions in (6a) and (6b) can be accounted for along the same line. If we assume, in accordance with (8), that in certain circumstances, the [-human] WH <u>what</u> can have a kind-level interpretation whereas the [+human] WH <u>who</u> cannot, the grammatical difference in question immediately follows. Given that <u>who</u> requires as its answer an expression which refers to a specific person as an individual, say, John, (6b) is ruled out, since as noted above, a single particular person cannot exist simultaneously at more than one place, let alone in "every" room, unless (s)he is an omnipresent being like God. On the other hand, (6a) is grammatical because <u>what</u> demands only a kind-level identity and permits a reading in which what actually exists in every room is individual things of that kind (for example, old desks), which is a possible situation in the actual world. The difference in the possibility of interpretation between (7a) and (7b) can also be accounted for by our assumption. The so-called narrow scope reading of the WH-phrase is possible for (7a) because <u>what</u> permits a kind-level construal; we can answer (7a) by saying "a newspaper", with the following situation in mind: every girl read different tokens of newspaper. On the other hand, this kind-level construal is impossible for <u>who</u>,

and thus a so-called narrow scope reading of the WH phrase is not available in (7b).

3.   Thus far we have seen several cases in which [-human] NPs can be interpreted as representing kinds, resulting in the gram- maticality of the sentence or an additional reading, whereas [+human] NPs cannot be assigned such an interpretation, hence the unacceptability of the sentence or the lack of the relevant reading. A question to be addressed in this section is: Why is it that [-human] NPs permit a kind-level interpretation, but [+human] NPs do not?

As a clue to answering this question, let us turn our at- tention to the notion of the basic level of categorization which has been discussed in the field of psychology and recently in- troduced into cognitive semantics (cf. Lakoff (1987)). The ini- tial study of basic level categories is made by Roger Brown in his paper "How shall a thing be called?" (1958). Brown first pointed out, on the basis of his well-known example using a dime, that objects have many names: "The dime in my pocket is not only a dime. It is also money, a metal object, a thing, and, moving to subordinates, it is a 1952 dime, in fact, a par- ticular 1952 dime with a unique pattern of scratches, discolora- tions, and smooth places" (p.14). Likewise, the spoon, for ex- ample, "is also a piece of silverware, an artifact, and a par- ticular ill-washed restaurant spoon" (p.16). Although objects have many names in a category hierarchy, Brown's real point is that a particular name at a particular level of categorization "has a superior status"; that is, a dime is called dime far more often than metal object, thing, or 1952 dime and "the spoon is seldom called anything but spoon." This level, at which a name has a superior status, is the basic level of categorization.

According to Brown, this basic level is the level of usual utility. The preference for the name dime over metal object or 1952 dime, for instance, "corresponds to the community-wide practice of treating" dimes as equivalent to all other coins of

the same denomination but distinct from coins of different
denominations; "in the grocery one dime is as good as another
but quite different from any nickel or penny." Likewise the
preference for the word spoon "corresponds to the community-wide
practice of treating spoons as equivalent but different from
knives and forks. There are no proper names for individual
spoons because their individuality seldom signifies." The same
may be true for other things, or more precisely, other non-human
entities, like trees, books, gold, water, fish, and so on. The
basic level in categorizing these things is the "species", or
kind, level. On the other hand, people in general have in-
dividual names like John, Mary, Hanako, and Taro. Individuality
is of much significance for humans, because we commonly regard a
person as an independent being with his own differentiated ego.
The basic level in characterizing humans is, then, considered to
be the individual rather than the kind level.

In this way, human beings and non-human entities seem to be
treated very differently in the cognitive component of the human
mind where categorization judgments are performed; the former
are identified mainly at the individual level, but the latter
tend to be recognized at the kind level. It is quite reasonable
to consider that this difference of cognitive origin leads
directly to the difference in interpretation between [+human]
and [-human] NPs posited in (8): an interpretation as a kind-
denoting expression is possible for the latter, but not for the
former. In short, the interpretive difference between [+human]
and [-human] NPs that we have been concerned with through this
paper can be considered to come from the following difference
which is presumably attributable to some cognitive consider-
ations: the basic level of categorization for human beings is
the individual level, while that for non-human entities is the
kind level.

4. This paper has observed that in both the Japanese quan-
tifier-floating construction and the English wh-question,

[+human] and [-human] NPs behave in a different way. We have proposed to account for this fact by postulating that a <u>kind</u>-level interpretation is possible for [-human] NPs but not for [+human] NPs. It is suggested that this difference in the interpretive possibility come originally from certain cognitive considerations.

NOTES

* In writing this paper, I have benefited greatly from discussion with Koichi Takezawa, Shinsuke Homma, Keiko Miyagawa and Kazue Takeda. I would like to express my deepest gratitude to them all.

1. In this paper I will not commit myself to any particular syntactic analysis of the quantifier-floating construction. Thus it remains an open question here whether or not a floating quantifier actually moves from the host NP in its derivation, although I will adopt a locution that might suggest the analysis in terms of syntactic movements.

    Below the following abbreviations will be used:

Nom: Nominative Case-marker

Acc: Accusative Case-marker

Top: Topic Marker

Cop: Copula

Q : Interrogative Marker

2. The relative constructions in (i) below are both grammatical, where the quantifier is contained in the relative head NP rather than in the relative clause.

    (i) a. [[Hanako-ga $\underline{e}$i nonda] nihon   no sake]-wa

            'Hanako-Nom   drank two bottles of sake -Top

> totemo oishi soodatta.
> very   tasty seemed'
> "The two bottles of sake which Hanako drank seemed
> very tasty."
>
> b. [[Hanako-ga e₁ nagutta] futari   no otoko]-wa
>   'Hanako-Nom   hit   two people of man   -Top
>   hansamu   datta.
>   handsome Cop.'
>   "The two men who Hanako hit were handsome."

3. A parallel contrast in grammaticality is observed between
nani 'what' and dare 'who' in Japanese WH questions as well.
Compare (ia) and (ib):

> (i) a. nani-ga [dono heya]-ni mo   aru no.
>   'what-Nom every room in also is Q'
>   "What is in every room?"
>   b. #dare-ga [dono heya]-ni mo   iru no.
>   'who-Nom   every room in also is Q'
>   "Who is in every room?"

    Shinsuke Homma (personal communication) points out another
interesting difference between nani and dare. Quantifier float-
ing is possible from nani, but not from dare, as seen in (ii):

> (ii) a. Taro-wa nani-o   sanbon   nonda no.
>   'Taro-Top what-Acc three bottles drank Q'
>   "(lit.) What did Taro drink three of it?"
>   b. *dare-ga futari   yattekita no.
>   'who-Nom two people came   Q'
>   "(lit.) Who two of them came?"

4. Here special attention should be paid to the fact that quan-

tified NPs with full nominal heads like _every_ _girl_ in (7a-b) do not permit a so-called family-of-questions interpretation, although the near analogue _everyone_ allows that interpretation, as May (1985) observes in an example like (i). Cf. Williams (1986).

> (i) What did everyone buy for Max?

5. In fact there is an answer to (7b) which corresponds to the narrow scope reading for _who_. Thus, _her_ _father_ is a possible answer. This type of answer, which Engdahl (1986) calls the _relational_ answer, has a curious property that it is so specific as to be able to meet the referentiality requirement imposed on the answer to _who_, but not completely specific nevertheless, so that it can have a narrow scope reading. In this paper below, however, I will eliminate this type of relational answer from discussion.

6. Under our common understanding of books, a book like _Seman-tics_ _and_ _Cognition_ is usually regarded as not a kind but an (abstract) individual. When considered relative to books as concrete things (i.e., copies of a book), however, we can see that in fact it represents a kind, not an individual.

REFERENCES

Brown, R. 1958. "How shall a thing be called?" _Psychological_ _Review_ 65, 14-21.

-----. 1965. _Social_ _Psychology_. New York: Free Press.

Carlson, G. 1980. _Reference_ _to_ _Kinds_ _in_ _English_. New York: Garland Publishing.

Engdahl, E. 1986. _Constituent_ _Questions_. Dordrecht: Reidel.

Jackendoff, R. 1983. _Semantics and Cognition_. Cambridge, MA:
     MIT Press.
Lakoff, G. 1987. _Women, Fire, and Dangerous Things_. Chicago:
     The University of Chicago Press.
May, R. 1985. _Logical Form: Its Structure and Derivation_.
     Cambridge, MA: MIT Press.
Watanabe, S. 1990. "_Pro_ and licensing of numeral quantifiers,"
     read at the monthly meeting of the Tsukuba English Linguis-
     tic Society held on May 27.
Williams, E. 1986. "A reassignment of functions of LF," _Linguis-
     tic Inquiry_ 17, 265-99.

Institute of Modern Languages and Cultures
University of Tsukuba