A CONTEXTUAL APPROACH TO JAPANESE ADJECTIVES*

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1. Introduction

In Japanese as well as in English there is a group of adjectives whose interpretation is heavily dependent on contexts, pragmatic and linguistic. One of such contextual factor is termed THEMATIC DIMENSIONS, by Bartsch(1986/87). In addition to THEMATIC DIMENSIONS, we propose it is necessary to recognize two other such factors, which we name COMPARISON DIMENSIONS and DEGREE DIMENSIONS. It is only after these three contextual factors are specified, is it possible to determine the truth condition of a sentence which contains an adjective expression. We also claim that this will provide a general framework applicable not only to Japanese but also to Korean or English.

When we say 'He is good,' this sentence has to be specified as in what respect he is good, as compared to what he is good, and what degree he is good. Unless this sentence is given such a specification, it cannot be given a truth value. These vectors are what we call THEMATIC DIMENSIONS (henceforth TD for short), COMPARISON DIMENSIONS (CD for short), and DEGREE DIMENSIONS (DD for short), respectively.

2. TD in Japanese Adjectives

Color, height, direction, humidity, temperature, price, weight, strength, personality, etc. are the dimensions or vectors by which the properties denoted by adjectives can be specified. Unless specified by these dimensions, the properties remain vague so that the sentences in which these factors are left unspecified are truth-conditionally underdetermined. Take for an English example, a sentence such as (1) below.

    (1) John is good at tennis.

In (1) 'at tennis' is what we call a TD, that is, a vector by which the property of 'good' is given a specification.

In what follows we will see how a TD is encoded in Japanese.

2.1. Encoding of a TD in Japanese

2.1.1. Explicit Encoding

    (2) Kare-wa tennis-ga umai. (=He is good at tennis.)
        he   tennis   good

    (3) Watashi-wa atama-ga itai. (=I have a headache.)
        I   head   painful

The typical marker of a TD in Japanese is 'ga', which indicates in what respect he is good or I have pain, that is, tennis or head.

2.1.2. Implicit Encoding

> (4) Hokkaido-wa samui.   (=It is cold in Hokkaido.)
>   is cold

> (5) Kare-wa hutotteiru.   (=He is fat.)
>   he   is fat

In these two sentences there is no explicit encoding of a TD, but (4) and (5) can be paraphrased as follows by the use of an explicit TD, respectively.

> (6) Hokkaido-wa ondo-ga hikui.   (=The temperature is
>   temperature low   low in Hokkaido.)

> (7) Kare-wa taijuu-ga omoi.   (=He is heavy in weight.)
>   he   weight is heavy

The following are also examples of implicit encoding of a TD but the TD is invariably omitted since there is a morphological clash or redundancy between the TD and the adjectives.

> (8) Kono jidoosha-wa (hayasa-ga) hayai.   (=This car
>   this cat   in speed   fast   runs fast.)

As these examples show, there is a morphological redundancy in the sentence since the TD has the morphological form 'hayasa' and the adjective has 'hayai.' Similar examples are as follows.

> (9) Kono hon-wa (atsusa-ga) atsui.   (=This book is
>   this book   thickness thick   thick.)

> (10) Kono hon-wa (omosa-ga) omoi.   (=This book is
>   this book   heaviness heavy   heavy.)

> (11) Fujisan-wa (takasa-ga) takai.   (=Mt. Fuji is
>   Mt. Fuji   height   high   high.)

In (8), (9), (10), (11), the TD's are obligatorily deleted because of morphological redundancy between the TD and the adjective

2.1.3. Optional Encoding

The encoding of a TD is optional in that the TD is omissible in the following sentences. In either case the TD 'iro-ga' meaning 'as far as the color is concerned' and 'nedan-ga' meaning 'as far as the price is concerned' can be omitted since the TD's are self-evident from the context.

> (12) Kono bara-wa (iro-ga) shiroi.   (=This rose is
>   this rose   in color white   white.)

(13) Shinkansho-wa (nedan-ga) takai.
new publications price   expensive
(=New publications are expensive.)

## 2.1.4. Contextual Encoding

Sometimes a TD can be omitted if it can be supplied from a
linguistic context. In the following dialogue, speaker B can
omit both theme[1] and the TD because both elements are self-evi-
dent from the utterance of the speaker A.

(14) Speaker A : Kare-wa tenisu-ga umai   ka.
                 he   tennis   good at Q
                 (=Is he good at tennis?)
     Speaker B : Ee,   totemo   umai yo.
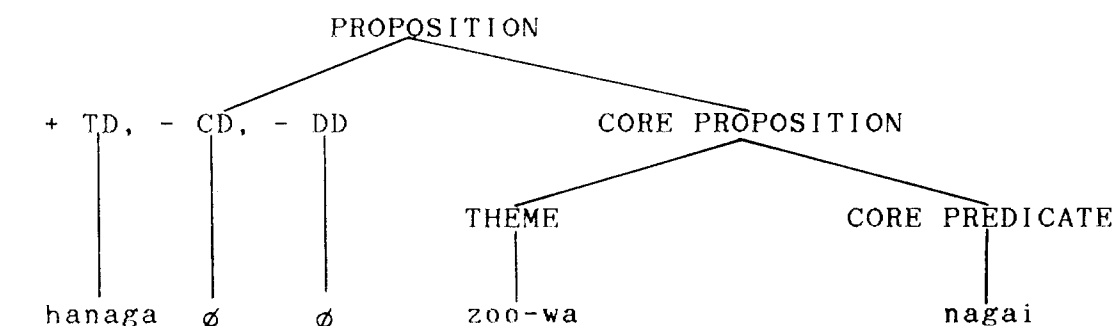   yes   very much good
                 (=Yes, he is very good.)

In this sentence, both the theme 'kare-wa' and the TD are absent
from the second sentence since they are clear from the utterance
of speaker A.

2.2. Cohesiveness of TD

In general, a TD and adjective are cohesive with each other
forming one unitary predicate. In this respect Mikami is basi-
cally right in asserting that the semantic structure of the
sentence 'Zoo-wa hana-ga nagai' (=Elephants have long trunks.) is
as shown below.

Zoo-wa	hana-ga nagai
	nominative case
theme	predicate
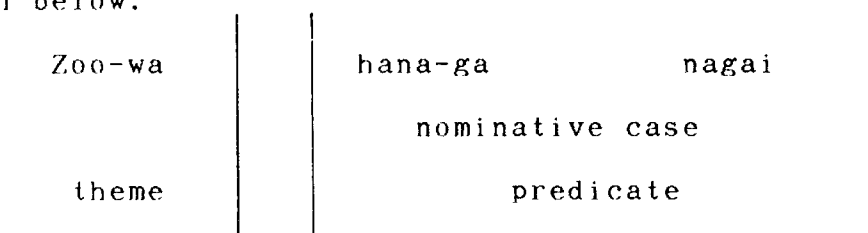
Instead of treating 'hanaga' as a nominative case as Mikami
did, we propose to call it a TD of a core predicate and call
'zoo-wa' a theme of a core predicate. To give an overall picture
of the whole semantic structure, we can represent it as follows.

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                    PROPOSITION
                   /          \
    + TD,  - CD,  - DD       CORE PROPOSITION
     |     |     |              /          \
     |     |     |          THEME       CORE PREDICATE
     |     |     |            |               |
   hanaga  ø     ø         zoo-wa           nagai
```

(+ : obligatory element; - : optional element
The example above is a case of an obligatory element, i.e.,
a case of + TD.)

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It should be noticed that the degree of cohesion of a TD to the
core predicate is different from one adjective to another the
degree can be compared by the following criteria: extractability
and omissibility.

2.2.1. Extractability

Extractability can be stated in the following respects: (1)
whether a TD is interchangeable with the theme of a sentence, (2)
whether it can be put in a focus position of a pseudo-cleft con-
struction, (3) whether a TD can be WH-questioned.

2.2.1.1. Interchangeability of a TD with a Theme

There are two groups of adjectives whose TD's are inter-
changeable with a theme. Let's call them group A and B adjec-
tives. Group A is a class for which interchanging of a TD with a
theme is not impossible but more or less unnatural. Group B is
the one in which we can freely interchange a theme with a TD with
a concomitant change of emphasis.

Group A

> (15) a. Kono tera-wa kimi-ga warui.   (=This temple is
>   this temple is sinister   sinister.)
>   b. Kimi-ga kono tera-wa warui.

(15) b is less common and almost unacceptable so that we can say
that 'kimi-ga warui' forms a unitary element, i.e., an idiom. It
should be mentioned in passing that inserting another element
like 'totemo' meaning 'very' between a TD 'kimi-ga' and a core
predicate 'warui' is less acceptable as compared with 'totemo
kimi-ga warui.' This supports our view that 'kimi-ga warui'
forms a unit as the following sentences show.

> (16) a. Kono tera-wa totemo kimi-ga warui.
>   (=This temple is very sinister.)
>   b. Kono tera-wa kimi-ga totemo warui.

This and the following examples are cases where 'ga' + adjective
constitutes an idiom. Similar examples in question are many in
number.

> (17) a. sen-ga hosoi (=delicate)
>   b. kage-ga usui (=unimpressive)
>   c. hone-ga oreru (=troublesome)
>   d. kiri-ga nai (=endless)
>   e. kimari-ga warui (=feel embarrassed)
>   f. hino utidokoro-ga nai (=unpeccable)
>   g. kigurai-ga takai (=proud)
>   h. ki-ga mijikai (=short-tempered)
>   i. katami-ga semai (=ashamed of)

Group B

In (18) a theme and a TD are freely interchangeable with a

concomitant change of emphasis on one or the other.

(18) a. Kare-wa tennis-ga umai. (=He is good at
        he   tennis good   tennis.)
     b. Tennis-wa kare-wa umai ga, yakyuu-wa hetada.
        tennis   he   good but baseball not good
        (=As for tennis, he is good at but as for
        baseball, he is not good at.)
     c. Tennis-wa kare-ga umai.
        (=As for tennis, it is he that is good at, not
        other persons.)

In (18) b 'tennis-wa' is emphasized while in (18) c the emphasis is put on a theme.

    Similar examples are shown below.

(19) a. Kare-wa seito-ni yasashii. (=He is kind to
        he   to pupils is kind   his pupils.)
     b. Seito-ni kare-wa yasashii.

(20) a. Kare-wa shigoto-ni kibishii. (=He is strict
        he   with work   strict   with his work.)
     b. Shigoto-ni kare-wa kibishii.

(21) a. Kono huku-wa party-ni huniai da.
        this dress for party not fit
        (=This dress is not fit for the party.)
     b. Party-ni kono huku-wa huniai da.

    Group A and Group B adjectives show a clear contrast in terms of interchangeability. The former class shows a tendency for a TD and the following theme towards forming a unitary element. If we change the order of the two elements the degree of well-formedness will decrease to a great extent. One the other hand, in the case of latter group, that is, Group B adjectives, the two elements can change the order with greater freedom, though with a change of emphasis either on a TD or on a theme.

2.2.1.2. TD in a Focus Position

    There are two groups of adjectives in terms of whether they can freely occur in a pseudo-cleft position (henceforth PCP) or not.

Group A
    Group A is a class in which putting a TD in PCP is almost impossible, though a theme is free to occur in PCP.

(22) a. *Kono tera-ga waruinowa kimida.
     b. Kimiga waruino wa kono tera da.
        sinister   this temple is
        (=It is this temple that is sinister.)

(23) a. *Kare-ga hosoino-wa sen da.

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        b.  Sen-ga hosoino-wa kare da.
               delicate            he is
            (=It is he who is delicate.)

    (24) a. *Kare-ga usuino-wa kage da.
         b.  Kage-ga usuino-wa kare da.
             unimpressive       he is
            (=It is he who is unimpressive.)
```

It is interesting to note that this group is quite identical in its member with the group A which was mentioned in 2.2.1.1.

Group B
    In (25) a TD, as well as a theme, can freely occur in PCP.

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    (25) a.  Kare-ga umaino-wa tennis da.
             he     is good     tennis is
            (=It is tennis that he is good at.)
         b.  Tennis-ga umaino-wa kare da.
             tennis    is good at  he is
            (=It is he who is good at tennis.)
```

There is a group of adjectives whose TD is free to occur in PCP. This group we may call group B, whose members are identical with group B in 2.2.1.1.

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    (26) a.  Kare-ga yasasiino wa seitoni-taishite da.
             he      is kind      to his pupils
            (=It is to his pupils that he is kind.)
         b.  Seito ni yasashino wa kare da.
             to his pupils kind      he is
            (=It is he who is kind to his pupils.)
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It should be noticed that in the sentence (26) a where a TD is put in a focus position 'seitoni taisite' instead of 'seito ni' in order to make clear that 'he is kind to his pupils.' Similar examples are shown below.

```
    (27) a.  Kare-ga kibishiino wa shigotoni taisite da.
             he      strict with      to his work
            (=It is with his work that he is strict.)
         b.  Shigotoni taisite kibishii no wa kare da.
             to his work        strict          he is
            (=It is he who is strict with his work.)

    (28) a.  Kono huku ga huniainano-wa party da.
             this dress    not fit        for a party
            (=It is for a party that his dress is not fit.)
         b.  Party ni huniai na no wa kono huku da.
             for party not fit         this dress
            (=It is this dress that is not fit for a
              party.)
```

2.2.1.3. Extraction of a TD by a WH-question

As shown in both 2.2.1.1. and 2.2.1.2. Group A and B behave differently in terms of interchangeability and cleftability. This is also the case with the extraction of a TD by a WH-question.

Group A

If we extract a TD by a WH-question from an adjective belonging to this group the sentence will become invariably ill-formed, while the extraction of a theme by the same operation is quite acceptable.

(29) a. *Kono tera-wa nani-ga warui-ka.
     b. Kimi-ga warui no wa nani ka.
         is sinister   what Q
         (=What is sinister?)
     c. Dono tera-ga kimi-ga warui no ka.
         which temple sinister   Q
         (=Which temple is sinister?)

(30) a. *Kare-wa nani-ga hosoino ka.
     b. Sen-ga hosoi no-wa dare ka.
         delicate   who Q
         (=Who is delicate?)

(31) a. *Kare-wa nani-ga usui no ka.
     b. Kage-ga usui no wa dare ka.
         unimpressive   who Q
         (=Who is unimpressive?)

(32) a. *Kono shigoto-wa nani-ga oreru no ka.
     b. Hone-ga oreru no-wa nani ka.
         troublesome   what Q
         (=What is troublesome?)
     c. Dono shigoto-ga hone-ga oreru no ka.
         which work   troublesome   Q
         (=Which work is troublesome?)

Group B

In contrast to the adjectives belonging to Group A, the adjectives in Group B behave differently in that either a TD or a theme can be WH-questioned.

(33) a. Nani-ga kare-wa umai   ka.   (=What is he good
        what   he   good at Q   at?)
     b. Tennis-ga umaino-wa dare ka.   (=Who is good at
        tennis   good at   who Q   tennis?)

(34) a. Dare-ni kare-wa yasashiino ka.   (=To whom he is
        to whom he   is kind   Q   kind?)
     b. Seito-ni yasashiino-wa dare ka.
        to students kind   who Q
        (=Who is kind to his pupils?)

(35) a. Nani-ni kare-wa kibishiino ka.   (=With what is
        with what he   strict   Q   he strict?)

b. Shigoto-ni kibishii no-wa dare ka.
       with work   strict   who Q
       (=Who is strict with the work?)

In this section, 2.2.1, we have investigated the degree of cohesiveness of a TD with a following adjective in terms of (1) interchangeability (2) cleftability, and (3) extractability by a WH-question. We have found that there are two groups of adjectives from the viewpoint of extractability, though there is a subtle difference between Groups A and B in terms of interchangeability as shown in 2.2.1.1.

If we limit our attention only to Group A, we notice that there is a difference of behavior between a TD and a theme: a theme can be extracted more freely from its original position, while a TD tends to be treated as a unitary element with the following adjective. This is clearly demonstrated by the reluctance with which a TD is put in a focus position or extracted by a WH-question.

It is worthwhile to speculate on the different behaviors of TD's belonging to Group A and B.

Look at sentences in (36).

(36) a. Kare-wa ashi-ga hayai. (=He is quick of foot.)
        he   foot   quick
     b. Kare-wa rikai-ga   hayai. (=He is quick of
        he   understanding quick   understanding.)
     c. Kare-wa asa   okiruno-ga   hayai.
        he   morning getting up   early
        (=He is an early riser.)
     d. Kare-wa keisansuruno-ga hayai.
        he   calculation does quick
        (=He is quick of calculation.)
     e. Kare-wa kakeruno-ga hayai. (=He is a fast
        he   running   fast   runner.)

The table below shows how each TD is different in terms of (1) interchangeability, (2) cleftability, (3) extractability by a WH-question.

	(1)interchangeability	(2)cleftability	(3)WH-question
sentence a	OK	?	?
b	OK	?	?
c	OK	?	?
d	OK	OK	OK
e	OK	OK	OK

(? shows a dubious status in acceptability.)

This table seems to show that 'hayai' belongs to Groups A

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and B at the same time. But it might be thought that the use of
'hayai' in (d) and (e) above can be an extension of the use in
(a) and (b). This speculation may be confirmed by the fact that
the TD's in (d) and (e) are nominalizations of a proposition like
'someone does calculation' or 'someone runs.' The use of nomi-
nalized forms as TD's has been made possible on the basis of the
use in (a), (b) and (c). Therefore that in (d) and (e) is a
^{2}
derivative use based on that in (a), (b) and (c).   Because (a),
(b) and (c) belong to Group A, and (d) and (e) to Group B, Group
A is a 'ur-form', while Group B is a derivation from Group A. If
this speculation is right, the observation we have made with
reference to Group A is quite characteristic of a TD : the degree
of cohesion with a following adjective is quite high. Such
examples can be multiplied. Take for example, 'itai' meaning
'painful.'

      (37) Watashi-wa atama-ga itai.   (=I have a headache.)
           I   head   painful

      (38) Watashi-wa saihu-wo torareta koto-wa itai.
           I   being robbed of my purse   hurt
         (=Being robbed of my purse hurts me.)

    In (37), 'atama-ga' is a TD and 'saihu-wo torareta koto-wa'
in (38) is also a TD, which is a nominalization of a proposition
'watashi-wa saihu-wo torareta.' It should be noticed that 'itai'
of the second sentence is used as a metaphorical extension of the
first 'itai' in the first sentence. It may be reasonable, there-
fore, to conjecture that a nominalized TD form is employed to-
gether with a metaphorical use of 'itai.' Of course the use of
'itai' belongs to the Group A, and the second use to the Group B.
If our speculation is correct, that is, the use of Group A is a
'ur-form', while that of Group B is the derivative use, our
conclusion that a TD has a higher degree of cohesion with a
following adjective as compared with the theme of a sentence can
also be supported.
    This is also the case with 'nigateda' meaning 'be poor at,'
'be weak at,' 'be no match for.'

      (39) a. Watashi-wa kare-ga nigateda.   (=I am no match
             I   him   no match for   for him.)
        b. Watashi-wa fork to knife de taberuno-ga nigate-
          da. I   fork and knife with eat not good at
        (=I'm not good at eating using a fork and knife.)

2.2.2. Omissibility

    In 2.2.1. the degree of extractability of a TD as compared
with a theme has been discussed in detail in terms of (1) inter-
changeability, (2) cleftability, and thirdly, (3) WH-question.
In this section we will give a detailed discussion of the problem
of omissibility of a TD. This issue is closely connected with
that of a encoding of a TD, which we have already dealt with in
2.1. above. There are various ways in which a TD is encoded:
explicit, implicit, optional, and contextual encoding. Of these,
implicit encoding is quite out of the question since there is no

TD explicitly encoded. This is clear in the cases of 'samui'(= ondo-ga hikui), 'hutotteiru'(= taiju-ga omoi).

Optional and contextual encoding are the cases where omission of a TD is taken for granted. To reiterate the examples of the cases in point:

(40) Optional encoding: Kono bara-wa shiroi.
                         ('iro-ga' is omitted.)
     contextual encoding: (Speaker A: Kare-wa tennis-ga
                                       umai-ka.)
                         Speaker B: Kare-wa umaiyo.
                         ('tennis' is omitted.)

It is only in the case of explicit encoding that the problem of omissibility of a TD comes to the fore.

In the case of the adjectives belonging to Group A, the omission of a TD will make the sentence quite unacceptable or change its meaning.

(41) a. Kono tera-wa warui. ('kimi-ga' is omitted.)
     b. Kare-wa hosoi. ('sen-ga' is omitted.)
     c. *Kare-wa usui. ('kage-ga' is omitted.)
     d. *Kono shigoto-wa oreru. ('hone-ga' is omitted.)
     e. *Kono shigoto-wa nai. ('kiri-ga' is omitted.)
     f. Kare-wa takai. ('kigurai-ga' is omitted.)

In the case of Group B, the omission will make the sentence vague or semantically different, if not unacceptable, and it is only with the help of the linguistic or non-linguistic context that the sentence can become semantically transparent.

(42) a. Kare-wa umai. ('tennis-ga' is omitted.)
     b. Kare-wa yasashii. ('seito-ni' is omitted.)
     c. Kare-wa kibishii. ('shigoto-ni' is omitted.)
     d. Kono huku-wa huniaida. ('party-ni' is omitted.)

In connection with a TD's greater tendency towards omissibility, it should be noted that a theme is also deletable in some cases.

(43) a. (Watashi-wa) haha-ga koishii. (=I long for my
             I   mother long for   mother.)
     b. (Watashi-wa) kokyoo-ga natsukashii.
             I   my old home be homesick
         (=I feel homesick for my dear old home.)
     c. (Watashi-wa) karada-ga darui. (=I feel weak.)
             I   my body   feel weak
     d. (Watashi-wa) kimari-ga warui. (=I feel uneasy.)
             I   feel uneasy
     e. (Watashi-wa) imooto-ga urayamashii.
             I   my sister am envious
         (=I am envious of my sister.)

It is interesting to observe that all these cases of theme deletion are those in which the theme is grammatically the first person singular 'I.' It is, therefore, safe to conclude that theme deletion is limited only to the cases where it is the first

person singular 'I' or plural 'we.'

Recall that we have put forward a speculation to the effect that Group B TD's are derivations as compared with those in Group A. If this is correct, we can conclude from the reluctance with which a TD is omitted from a complex adjective that in general a TD shows a greater tendency towards forming a unit with the following adjective as compared with the theme.

In this section 2.2. we have investigated how a TD is integrated into the following adjectival element forming a unitary unit. In 2.2.1. we saw that a TD shows a greater cohesion with the following adjectival element than with the theme. This is demonstrated in terms of (1) interchangeability, (2) cleftability, and (3) extractability by a WH-question. In section 2.2.2. we observed a decreased tendency of TD's to be deleted. This fact also confirms our conclusion that a TD forms an unseparable unit with the following adjective, forming thereby a single element with it. These facts show a sharp contrast with the theme.

2.2.3. Repeatability of a TD

In principle, the number of themes and a TD's is quite limited in a proposition. A proposition cannot have more than one theme and one TD. This principle of one theme and one TD per proposition is intuitively quite reasonable. But sometimes a TD is repeatable, as shown in the following sentences.

(44) John-wa suiei-wa crawl-ga umaku, yakyuu-wa
John swimming crawl good at baseball

nanshiki yakyuu-ga umai.
soft-ball baseball good at
(=As for swimming, John is good at crawl strokes,
and as for baseball, he is good at soft-ball
baseball.)

(45) John-wa gakki-wa cello-ga umai.
John musical instrument cello good at
(=As for musical instrument, John is good at
playing cello.)

As (44) shows, there are two TD's in each conjunct, that is, 'suiei-wa' and 'crawl-ga', and 'yakyuu-wa' and 'nanshikiyakyuu-ga', respectively, in (44). This is also the case with the sentence (45): 'gakki-wa' and 'cello-ga.' It is interesting to note that the recurrence of TD's is possible as long as the first TD and the second one are in the inclusion relationship, that is, the first TD is conceptually greater than the second, which is the case of 'suiei' and 'crawl', and 'gakki' and 'cello.' We will adopt the following notation to represent the inclusion relationship, according to Bartch: $TD_{i,j} \in TD_i$. This means that $TD_{i,j}$ is a subconcept of TD_i. It should be observed that the order of two TD's should never be $TD_{i,j} + TD_i$ but should be $TD_i + TD_{i,j}$. This is clear from the following examples.

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(46) *John-wa crawl-wa suiei-ga umaku, nanshiki
yakyuu-wa yakyuu-ga umai.

(47) *John-wa cello-wa gakki-ga umai.

The repeatability of TD's poses a sharp contrast with a
theme, which never recurs in one proposition. For example, the
following sentence is quite unacceptable, even though the two
themes are in an inclusion relationship.

(48) a. *John-wa nihonjin-wa atama-ga ii.
        John   Japanese   clever
     b. *Nihonjin-wa John-wa atam-ga ii.

'John-wa' and 'Nihonjin-wa' stand in an inclusion relationship
with 'John' being a smaller concept than 'Nihonjin.' But the two
sentences where two themes occur in a different order are quite
out.

2.3. Upgrading of a TD

In the preceding section we have mentioned the principle of
one theme and one TD per proposition. There is, however, an
important exception to this rule when a TD is upgraded to a theme
and an original theme is downgraded to a modifier element of the
new theme. This may be exemplified by the following sentences.

(49) a. Zoo-wa hana-ga nagai. (=An elephant has a long
        elephant trunk is long   trunk.)
     b. Zoo-no   hana-wa nagai. (=The trunk of an
        elephant's trunk is long   elephant is long.)

The sentence (49) a has a theme 'zoo-wa' and a TD 'hana-ga'
in one proposition but (49) b has only a theme 'hana-wa' with a
modifying element 'zoo-no.' We call this change of status of a
TD from a TD to a theme upgrading of a TD. It should be observed
that upgrading of a TD necessarily involves a downgrading of an
original theme into a modifying element of the newly upgraded
theme. The principle of one theme per proposition still holds,
even though a TD is absent in the proposition. The lack of a TD
is intuitively clear because the newly upgraded theme has enough
specification through the use of a modifying element which pre-
cedes the new theme. When a theme is fully specified, there is
no need to make further specification by the help of a TD. The
following are the typical examples where there is upgrading of a
TD with the concomitant downgrading of a theme.

(50) a. Kare-wa tennis-ga umai.(=He is good at tennis.)
     b. Kare-no tennis-wa umai.(=His tennis is good.)
        his   tennis   is good

(51) a. Kare-wa ashi-ga hayai. (=He is quick of foot.)
        he   foot   is quick
     b. Kare-no ashi-wa hayai. (=His walking is quick.)
        his   foot   is quick

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```
(52) a. Kare-wa rikai-ga      hayai.   (=He is quick of
         he        understanding is quick   understanding.)
     b. Kare-no rikai-wa      hayai.
         his       understanding is quick
        (=His understanding is quick.)
```
In contrast to sentence (49) a, where there are a theme
'zoo-wa' and a TD 'hana-ga', (49) b has only a newly upgraded
theme 'zoo-no hana-wa', with a concomitant disappearance of a TD
'hana-ga.' Instead, the new theme 'hana-wa' has enough specifi-
cation with a modifying element 'zoo-no' attached before the
theme. We must note that the new theme has an unmarked theme-
marker 'wa', instead of 'ga.'

It is worth noticing that not all TD's undergo the process
of upgrading. There are a great many exceptions to the upgrading
process, as is clear from the following examples.

```
(53) a. ? Kare-no sen-wa hosoi.
     b. ? Kare-no kage-wa usui.
     c. * Kono shigoto-no hone-ga oreru.
     d. * Kono tera-no kimi-ga warui.
     e. * Kare-no ki-ga mijikai.
     f. * Watashi-no kimari-ga warui.
```

It would be safe to conclude from these data that not all
TD's are susceptible to upgrading and if there is upgrading of
TD's to the theme status, there is sure to be disappearance of a
TD. So we can say that only if there is upgrading of a TD, only
then is there downgrading of an original theme.

3. Encoding of a Comparison Dimension (CD)

A degree adjective like 'tall' implicitly encodes a compari-
son dimension like 'taller than X', with X being specified either
by a linguistic or non-linguistic context. Take for example, the
following sentences.

```
(54) a. He is tall.
     b. For a Vietnamese he is tall.
```

In (54) a, size like 'tallness' is always relative to some im-
plicit measure such as the height of an average person and it is
nonsense to talk about tallness except relative to such a com-
parison class. On the other hand, in (54) b, a comparison class
is explicitly encoded in the form of 'for a Vietnamese.' This is
the case of a linguistic specification of a comparison dimension,
while (54) a is the case of non-linguistic contextual encoding of
a comparison dimension. The problem is how to represent such a
comparison dimension. MaConnell-Ginet (1973) uses the notion of
'delineation,' contextual variables which fix the extension of
degree adjectives and 'd' stands for such a contextual dimension.
According to this formalism, (54) a is represented as follows.

```
(55) tall  (he)
       d
```

Klein (1980) uses the following notation to indicate such a

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contextual dimension.

<pre>
(56) a. [tall (he)]
                    c
     b. [tall (he)]
                    c=Vietnamese
</pre>

Henceforth, we will adopt the following notation to specify a comparison dimension for reasons we will touch upon later.

<pre>
(57) a. {CD=implicit}, tall (he)
     b. {CD=Vietnamese}, tall (he)
</pre>

In both a and b, the bracket {.....} shows how a CD is encoded: in (54) a it is contextually encoded and in b it is explicitly encoded. So that { CD=implicit } means the former type of encoding, while {CD=Vietnamese} signifies the latter type of encoding. The parenthesis represents the argument position, 'tall' being a core predicate. Let's take a Japanese sentence and see how both a TD and a CD are encoded.

<pre>
(58) Kare-wa basketball-no senshu-no wari niwa sei-ga
     he   basket-ball player   for tallness

     hikui.
     short
     (=He is short for a basketball player.)
</pre>

In this sentence 'sei-ga' plays the role of a TD, while 'basketball-no senshu-no wari niwa' the role of a CD so that the whole semantic structure can be represented as follows:

<pre>
(59) { sei-ga (TD=tallness), basketball-no senshu-no
     wariniwa (CD=basketball player) }, hikui (kare)
</pre>

In this sentence 'sei-ga' functions as a TD so that it is represented as 'sei-ga' (TD=tallness). 'Basketball-no senshu-no wariniwa' (CD=basketball player) means that the phrase functions as a role of a CD. Hikui (kare) represents the predicate-argument relation, which is a core proposition consisting of a core predicate and a theme.

3.1. Implicit Encoding of a CD

<pre>
(60) a.(=(49) a) Zoo-wa hana-ga nagai.
                  (=An elephant has a long trunk.)
     b. Kono zoo-wa hana-ga nagai. (=This elephant
        this elephant trunk long   has a long trunk.)
</pre>

It should be noted before going to the question of implicit encoding of a CD that 'nagai' in (60) a is a kind-level predicate a la Carlson (1980), because 'zoo-wa' denotes a kind-level entity as this English translation shows, while in b 'nagai' is an object-level predicate since 'kono zoo-wa' is an object-level entity. It is interesting to observe that a CD is different according to whether a subject is a kind-level or an object-level entity. If a subject denotes a kind-level entity like (60) a, the implicit CD is other bodily parts of elephants like feet or

tails. Or else it is other animals like lions or giraffes.
Therefore if a CD is explicitly expressed, (60) a can be para-
phrased either as (61) a or b.

> (61) a. Elephants have long trunks as compared with
>   other parts of the body like feet or tails.
>   b. Elephants have long trunks as compared with
>   other animals.

In the case of (60) b, the implicit CD is other elephants as
compared with this elephant in question. (60) b can, therefore,
be paraphrased as follows.

> (62) This elephant has a long trunk as compared with
>   other elephants.

(61) a, b and (62) can, therefore, be formalized as follows,
respectively.

> (63) a. {hana-ga (TD=trunk), other parts of elephants'
>   body (CD=implicit)} nagai (zoo^k)
>   b. {hana-ga (TD=trunk), other animals like lions
>   or giraffes (CD=implicit)}, nagai (zoo^k)

> (64) {hana-ga (TD=trunk), other elephants in a context
>   (CD=implicit)}, nagai (zoo^l)
> ^{k} ^{l}

The superscript ^{k} or ^{l} signifies that the relevant entity belongs
to a kind- or object-level entity. All these three sentences
contain what is called a predicate adjective. It should be
mentioned in passing that we have a similar formalization with an
attributive adjective.

> (65) a. Kono zoo-wa ookii. (=This elephant is big.)
>   b. Kore-wa ookina zoo da.
>   (=This is a big elephant.)

> (66) a. {size (TD=implicit), other elephants in a
>   relevant context (CD=implicit)}, ookii (kono
>   zoo^l)
>   b. {size (TD=implicit), other elephants in a
>   relevant context (CD=implicit)},
>   ookii (kore^l) & zoo (kore^l)

It is important to point out that the adjective 'ookii' in (65) b
should be evaluated with reference to an implicit CD, that is,
with reference to other elephants in a relevant context, not in
an absolute sense.

So far we have treated only cases where a CD is implicitly expressed without mentioning whether a TD is explicitly or implicitly expressed in the same proposition. But in fact, there are several possible combinations of a TD and a CD within a single proposition: these are case of (1) an explicit TD and an implicit CD, and (2) an implicit TD and an explicit CD, and lastly (3) explicit TD and an explicit CD. We will touch on all these cases in that order.

3.2. An Explicit TD and an Implicit CD

      (67) John-wa atama-ga ii. (=John is clever.)
            head   clever

We have dealt with the problem of an explicit TD in 2.1. above in some detail but to simplify the matter we haven't touched on the issue of an implicit CD. (67) shown above seems to be an example where there is no CD, though there is an explicit TD 'atama-ga.' In actuality, however, there is an implicitly encoded CD in the sentene. (67) means John is clever as compared with an average person in a relevant context so that (67) can be formalized as follows.

      (68) {atama-ga (TD=explicit), average persons in a
           relevant context (CD=implicit)}, ii (John)

The same can be said with the following sentence (69), which can be formalized as (70).

      (69) John-wa hito-ga   ii. (=John is good natured.)
            is good natured

      (70) {hito-ga (TD=explicit), average persons in a
           relevant context (CD=implicit)}, ii (John)

As we see in these formalizations, John's cleverness and good-naturedness is compared with an implicit and contextually specified comparison dimension, that is, average persons' cleverness and good-naturedness in a relevant context. Such examples where a TD is explicitly expressed with an implicit CD are quite a few in number so that there is no need to elaborate on this point.

3.3. An Implicit TD and an Explicit CD

Let's call sentence (67) and (69) Group A and compare them with the following sentences (71) and (72), which we will call Group B for convenience.

Group B
      (71) Sakana-wa   tai-ga   ii.   (=As for fish, sea
          as for fish sea bream is tasty   bream is tasty.)

(72) Danshi gakusei-wa John-ga dekiru.
     as for boys   John   excellent
     (=As for boys, John is excellent.)

These sentences are seemingly like those in Group A, espe-
cially in terms of the 'wa-ga' combination. But in fact, while
the sentences in Group A are the combination of a theme and an
explicit TD, those in Group B are the combination of pair of an
implicit TD and an explicit CD. The reason is as follows. In
(71), for example, 'sakana' meaning 'fish', acts as the theme of
the proposition with an implicit TD 'aji-ga' meaning 'taste.'
'tai-ga' in this sentence is acting as a CD meaning 'sea bream as
compared with another kind of fish.' AS a consequence, the whole
sentence can be paraphrased as in (73) with the formalization in
(74).

        (73) Sakana-wa tai-ga hokano shurui ni kurabete aji-ga
             ii. (=As for fish, sea bream is tasty as compared
             with other kind of fish.)

        (74) {aji-ga (TD=implicit), tai-ga (CD=explicit)}
             ii (sakana)

The same is true with (72), whose paraphrase and semantic struc-
ture are as follows.

        (75) Danshi gakusei-wa John-ga benkyoo-ga dekiru.
             (=As for boys, John is excellent as compared with
              other boys.)

        (76) {benkyo-ga (TD=implicit) John-ga (CD=explicit)}
             dekiru (danshi gakusei)

The sentences in Group A and B are different in the following
respects.

1) The first NP (=sakana-wa) and the second one (=tai-ga) in
   Group B are in an inclusion relationship: NP $\in$ NP , which
                                               2   1
   is never the case with Group A.

2) NP and NP in Group B are not interchangeable, while those in
   1   2
   Group A are with a concomitant change of combination of
   'wa-ga' into 'wa-wa', which is shown in (77), (78), (79), and
   (80) below.

Group A
        (77) *Tai-wa sakana-ga ii.

        (78) *John-wa danshi gakusei-ga dekiru.

Group B

(79) Atama-wa John -wa ii (ga, shikashi, huugawarina
hito da.)
(=Indeed, John is clever but he is a curious
personality.)

(80) Hito-wa John-wa ii (ga, dokoka maga nukete iru.)
(=Indeed, John is a good man, but he is somewhat
featherbrained.)

3) The theme NP's in Group B are what are called kind-level NP's,
while those in Group A are object level NP's.

4) While neither theme nor CD NP's in Group B can occur in the
focus position of a pseudo-cleft sentence, those theme NP's in
Group A can, though a TD cannot as shown in (82) b and (83) b.

Group B

(81) a.*Sakana-ga iino-wa tai da.
b.*Tai-ga iino-wa sakana da.

Group A

(82) a. Atama-ga iino-wa John da.
b.*John-ga iino-wa atama da.

(83) a. Hito-ga iino-wa John da.
b.*John-ga iino-wa hito da.

These four differences have something to do with the diffe-
ences in the combination of an explicit TD and an implicit CD
dealt with in 3.2. and that of an implicit TD with an explicit CD
dealt with in this section.

3.4. An Explicit TD and an Explicit CD.

So far we have discussed those cases in which a TD is ex-
plicit and a CD is implicit or vice versa. In this section we
will touch upon a case where both dimensions are explicit.

(84) Dansei-wa kono class-ga benkyoo-ga yoku dekiru.
boys this class are hard workers
(=Boys in this class as compared with other
classes are hard workers.)

(85) Bunmeikoku-wa josei-ga heikin jumyoo-ga
civilized countries females average life span
3
nagai .
is long
(=In civilized countries, females are longer as
compared with males in their average life span.)

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<pre>
        (86) Kono text-wa bokuni-wa teido-ga takasugiru.
             this text   to me   degree   too high
             (=This textbook is too difficult for me.)
</pre>

These are cases where both a TD and a CD occur in one sentence.
These can be formalized respectively, as follows.

<pre>
        (87) {benkyoo-ga (TD=explicit), kono class-ga
             (CD=explicit)}, yoku dekiru (dansei)

        (88) {heikin jumyoo (TD=explicit), josei-ga
             (CD=explicit)}, nagai (bunmeikoku)

        (89) {teido-ga (TD=explicit), bokuni-wa (CD=explicit)},
             takasugiru (kono text)
</pre>

Several points should be mentioned in connection with (85).

1) This sentence has the interpretation given in a parentheses
   below since 'josei-ga' is taken as an explicit CD in this
   sentence. The compared entity is the male population in
   civilized countries.

2) In (90) shown below there are two TD's in the single sentence.
   Intuitively, there is no reason to forbid a sentence to have
   more than one CD as long as they are different in conceptual
   categories. In (90) 'bunmeikoku,' 'josei' belong to two
   different semantic categories. In this respect, a TD and a CD
   slightly differ in that the former can be reiterated in a
   single sentence only if there is an inclusion relationship
   between the two TD's as was demonstrated in 2.3.3. above. But
   in the case of CD's no such inclusion relation is necessary.

<pre>
        (90) Bunmeikoku-ga josei-ga heikin jumyoo-ga nagai.
             (=In civilized countries as compared with
                 uncivilized ones, the female population enjoys a
                 longer life span than the male population.)
</pre>

But if we analyze the sentence as (91) shown below, it has no
theme of its own, which is a problem. So we cannot claim that
(91) is the final solution.

<pre>
        (91) {jumyoo-ga (TD=explicit), bunmeikoku-ga (CD=
             explicit), josei-ga (CD=explicit)] nagai (?)
</pre>

<pre>
3)   (92) Bunmeikoku-no   josei-wa heikin   jumyoo-ga
             of civilized countries females average life span

             nagai.
             is long
             (=The females of the civilized countries are
                 enjoying a longer life span.)
</pre>
This is an example of upgrading of a CD to a complex theme,
while the original theme is downgraded to a part of a theme,
the original TD 'heikin jumyoo' being kept as it is. This is

an interesting case of a CD being upgraded to a theme as shown below.

(93) {heikin jumyoo-ga (TD=explicit)} nagai
     (bunmeikoku-no josei)

4)   (94) Bunmeikoku-no   josei-no   heikinjumyoo-wa
             of civilized countries of females average life span

         nagai.
         is long
         (=The average life span of females of civilized
             countries is long.)
(94) is another example of downgrading and upgrading: the
original explicit TD 'heikinjumyoo' and the explicit CD
'josei' are downgraded to a part of a new theme, so that there
is neither a TD not a CD in this sentence. We can say that as
long as there is downgrading of the original TD or CD, it is
not necessary to have such an element. This is because a new
theme has enough information in a newly constructed complex
theme. The semantic structure of (94) can be analyzed as
follows.

(95) nagai (bunmeikoku-no josei-no heikinjumyoo)

As (95) shows, the original TD 'heikinjumyoo-ga' and the
original CD 'josei-ga' are downgraded to a part of the new
theme 'bunmeikoku-no josei-no heikinjumyoo-wa.' It can be
generalized that a proposition can go without either TD or CD
as long as there is downgrading of these semantic elements
which become a part of a new complex theme 'bunmeikoku-no
josei-no heikinjumyoo.'

4. Degree Dimensions (DD)

(96) a. John-wa sei-ga hikui. (=John is short.)
        John   is short
     b. John-wa basket senshu-no wariniwa sei-ga hikui.
               for a basketball player   is short
        (=John is short for a basketball player.)
     c. John-wa basket senshu-no wariniwa totemo
               for a basketball player   very

        sei-ga hikui.
        is short
        (=John is very short for a basketball player.)

    In (96) a 'John' is compared with a certain contextually
determined comparative dimension, which is only implicitly ex-
pressed. In addition, a degree dimension is only implicitly
implicated. This is also the case with (96) b. But in this case
'basket no senshu-no wariniwa' meaning 'for a basketball player'
acts as an explicit CD. (96) c has, in addition to the explicit
CD, a DD 'totemo' meaning 'very.' All the sentences are given
the following formalization, respectively.

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(97) a. {sei-ga (TD=explicit), (CD=implicit), (DD=
       implicit)}, takai (John)
       (John)
    b. {sei-ga (TD=explicit), basket-no senshuno-
       warini-wa (CD=explicit)}, takai (John)
    c. {sei-ga (TD=explicit),basket-no senshunowarini-
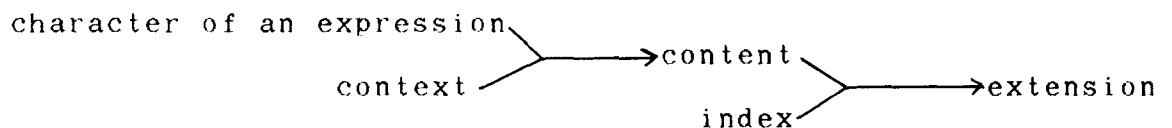   wa (CD=explicit), totemo (DD=explicit)}, takai
       (John)

As these fomalizations show, DD is explicitly or implicitly
expressed in a sentence. On the topic of DD there is not so many
things to comment on.

5. Formalization

    Ramifying Frege's distinction between sense and denotation,
Kaplan (1978) tries to add two varieties of sense, that is,
character and content. The character is defined as a function
from contexts to content. For example, the character of 'I' is
given the following definition in Kaplan (1978).

        The character of 'I' would then be represented by the
        function that assigns to each context that content
        which is represented by the constant function from
        possible worlds to the agent of the context. The
        latter function has been called an 'individual concept.'

The content, then, is characterized as functions from contexts or
possible worlds to extensions. The notion of Kaplan's character
and content corresponds to what is called meaning and interpreta-
tion, respectively. The whole idea of Kaplan's can be diagram-
matically represented as follow.

    character of an expression
                               >————————>content
              context ————————/   \
                                    index ——————/————>extension


    Based on this idea, Bartsch (1986/87) tries to analyze the
context dependency of adjectives by distinguishing the two types
of the meaning of the adjectives and call them 'preproperty' and
'property', which are equivalent to Kaplan's character and
content, respectively. Consider the following dialogue:

        (98) Speaker A: John-wa tennis-wa doo?
                        John   tennis   how
                        (=How good is John at playing tennis?)
             Speaker B: Umai yo. (=He is good.)

In the last sentence, the adjective 'umai' is already contextual-
ly specified as to the thematic dimension 'tennis' but it has
still to be defined by the remaining two dimensions, that is, (1)
a comparison dimension and (2) a degree dimension: namely the
adjective 'good' has a preproperty which has to be specified by
the three contextual dimensions. Borrowing the idea of preprop-

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erty and property from Bartsch, we will formalize the Japanese
adjectives as follows. Let P^1, P^2, ... be preproperties, respec-
tively. If we follow Kaplan's notion of character and content,
we can represent the semantic structure of 'umai' meaning 'good'
in English as follows.
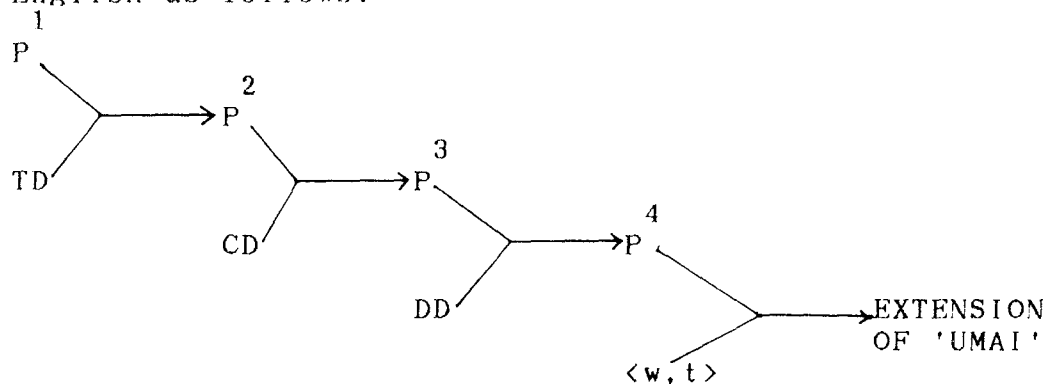
$\langle w,t\rangle$ here means a world-time index.

Another way of representing this is shown below in (99).

(99) $((((P^1 \ (TD)) \ CD) \ \langle w,t\rangle) = $ EXTENSION OF 'UMAI'

The order of various kinds of dimension applying to a pre-
property is irrelevant here so that any order of application is
permitted. (100) is another example of application.

(100) $((((P^1 \ (CD)) \ DD) \ TD) \ \langle w,t\rangle) = $ EXTENSION OF 'UMAI'

Also irrelevant is whether the application is hierarchical
as shown in (99) or non-hierachical as shown in (101) below.

(101) $P^1 \ (TD + CD + DD + \langle w,t\rangle) = $ EXTENSION OF 'UMAI'

The next question is what semantic type should be given to
the three contextual factors. Obviously, the extension of 'good'
is $\langle e,t\rangle$, the intension being $\langle s,\langle e,t\rangle\rangle$. Intuitively, the seman-
tic type of degree adverbs is $\langle s,\langle e,t\rangle,\langle e,t\rangle\rangle$, so that the other
contextual factors should be given a similar type. To put the
conclusion first, the four contextual factors can be given the
following semantic type.

(102) $\langle c,\langle c,\langle c,\langle s,\langle\langle e,t\rangle\rangle\rangle\rangle\rangle\rangle$

The reason of such a formalization is as follows. If a TD
is specified, we get (103).

(103) $\langle c,\langle c,\langle s,\langle\langle e,t\rangle,\langle e,t\rangle\rangle\rangle\rangle\rangle$

Then if a CD is specified, we get next (104).

(104) <c,<s,<<e,t>,<e,t>>>>

When a DD is given as a specification, we then get (105).

(105) <s,<<e,t>,<e,t>>>

When a world-time pair is specified, we finally get (106).

(106) <<e,t>,<e,t>>

This is the desired result. Of course, as was mentioned earlier, the order of specification of the contextual factors such as TD, CD, DD, and world-time pairs is quite irrelevant. It should be worthy of notice that not only a degree adverb, which is called a DD here, but also a CD and TD are treated as an adverbial element modifying a core predicate adjective. This is a drastically different treatment of a 'ga'-marked Japanese NP, which has traditionally been called a subject together with a 'wa'-marked NP.

6. Conclusion

The 'wa-ga' adjective construction discussed so far has a long history in Japanese grammar. Yoshio Yamada (1902) was probably the first grammarian who dealt with the construction. He claimed that a 'ga'-marked NP, which he called subjective case, forms a complex predicate together with a following adjective. The 'wa'-marked NP is also called a subjective case, so that the whole construction has the following structure.

John-wa	judoo-ga	umai.	(=John is good at
	nominative case	predicate	judo.)
nominative case	complex predicate		

Since his publication of Yamada (1902), Yamada's theory on Japanese 'wa-ga' adjective construction has been a dominant one among the Japanese grammarians and Hashimoto (1948) is one of the books which has inherited this tradition.

Mikami (1960) is probably the first book to have cast a serious doubt on this theory. As was introduced earlier in this paper, a 'wa'-marked NP is termed a 'theme' by Mikami, which we adopted in this paper.

Since the 1970's there has been an interesting tendency among Japanese grammarians to treat the construction within the framework of predicate argument structure: Yoshio Nitta (1975), Akio Ishigami (1977), Tetsuo Koyano (1980, 1985) belong to this group of researches. I think this is a basically correct tenet, though it is my contention that not all particle marked NP's act as an intrinsic argument, as I have tried to show at length. My basic contentions are as follows.

First, I have attempted to argue, primarily following the

basic framework of Bartsch (1986/7), that a thematic vector or perspective should be taken into account in specifying the truth condition of a sentence containing Japanese adjectives.

In addition to the thematic dimension, I have tried to propose that two other contextual factors, that is, a comparison dimension and a degree dimension are playing a similar role in specifying the truth condition of a proposition.

Secondly, we have shown that there are various modes of encoding these three dimensions: explicit, implicit, contextual, optional, and obligatory. All of these are expressed, if explicitly encoded, primarily by 'wa' and other particles. This shows a clear contrast with English. The latter has no definite way of expressing what we call thematic dimensions. Sometimes they are expressed by a prepositional phrase, an adverb or another phrase, as exemplified below, with the Japanese counterparts given in (108).

(107) a. John is good at swimming.
      b. John is fine healthwise.
      c. John is best with respect to style.

(108) a. John-wa suiei-ga umai.
      b. John-wa kenkoo-ga yoi.
      c. John-wa style-ga ichiban yoi.

Based on this fact, we can safely conclude that Japanese, and in this respect, Korean too, are languages in which a thematic dimension is easily expressed by particles.

Thirdly, we demonstrated how a theme is downgraded to a modifying element of a newly upgraded complex theme, which has originally played the role of a thematic dimension. This is clearly shown by the typical 'wa-ga' adjective construction like 'zoo-wa hana-ga nagai,' 'zoo-no hana-wa nagai.' In the second sentence the original thematic dimension 'hana-ga' is upgraded to theme status together with the downgraded theme 'zoo-no', forming a complex theme 'zoo-no hana-wa' as a whole. It is my basic contention that an adjective construction without a thematic dimension is possible if a complex theme is assigned enough information. This is also the case with a comparison dimension. Earlier in this paper I have shown how a CD is downgraded to a modifying element of a newly constructed theme by citing an example like 'bunmei koku-no josei-no heikin jumyoo-wa nagai.' In short, I have maintained that a proposition containing an adjective without a dimensional specification is possible if a newly constructed complex theme with a downgrading and upgrading process has enough information in itself.

Fourthly, we have made a claim that the notion of 'kind-,' 'object-,' 'stage-,' level predicate as advocated by Carlson (1980) is very helpful in predicting an implicit comparison as was shown in 3.1. The distinction of kind- and object-level entity can predict the different implicit CD's implied in the sentence 'zoo-wa hana-ga nagai,' and 'kono zoo-wa hana-ga nagai.' This is also the case with English sentences like 'fleas are small,' and 'this flea is small.'

Notes

1 It should be noted that the term 'theme' here is used in a
semantic sense, not in a grammatical sense. This poses a sharp
contrast with Mikami's treatment, which will be touched on in the
next section. The 'theme' here employed acts as an argument,
with a 'core predicate' acting as a function in a function-argu-
ment structure. In spite of this difference, we agree with
Mikami (1960) in asserting that a sentence like 'Zoo-wa hana-ga
nagai' has a hierarchical structure. To see this similarity,
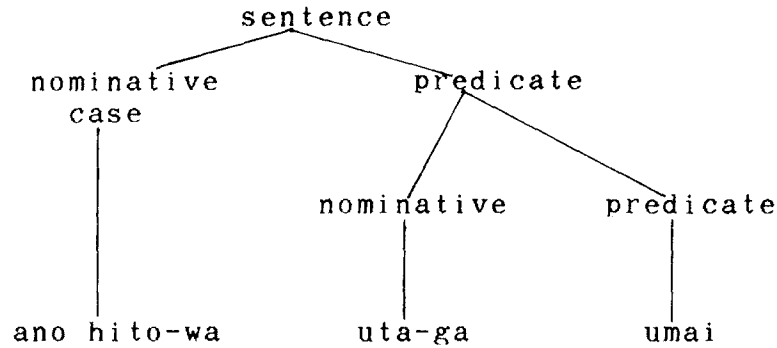let's compare the two versions in terms of a tree structure.
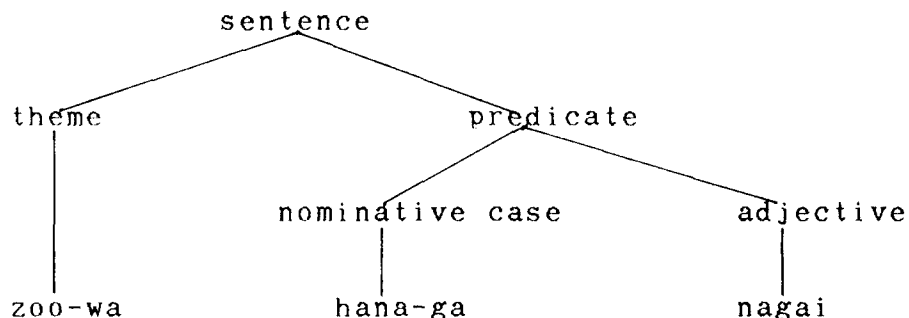
Mikami (1960)
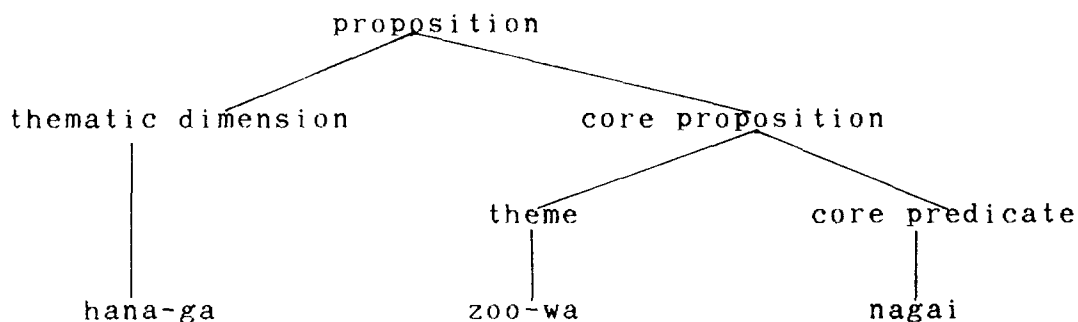
Ikeya (1990)

There is, however, an important difference between the two ver-
sions. While Mikami treats 'hana-ga nagai' as one unit, Ikeya
treats 'zoo-wa nagai' as constituting one constituent. It should
also be noted that Mikami's version shows an interesting similar-
ity between Yamada (1902), which is shown below.

```
                        sentence
                 /                    \
         nominative              predicate
           case                  /        \
             |            nominative      predicate
             |                |               |
             |                |               |
         ano hito-wa        uta-ga          umai
```

'Ano hito-wa uta-ga umai' meaning 'that person is good at sing-
ing' is given a structure shown above in Yamada (1902). The only
difference between the two, that is, Mikami's and Yamada's is
that while the latter has two nominative cases, the first has
only one nominative case.

2   As to the notion 'derivative use' or 'based on relationship',
I obtained a hint from Kajita (1977), but the present use does
not commit itself to the dynamic model advocated by Kajita
(1977).

3   I owe this example to Kuno (1973).

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