A Note on Two Types of Interpretations of Nominals:
Action and Product*
Yoshio Endo

0. Introduction

The present note discusses two types of interpretations of
nominals. One is the interpretation in which head N has action/
action-like reading(henceforth, action reading) and the whole NP
describes event; and the other is the one in which head N has
product/product-like reading(henceforth, product reading) and
the whole NP does not describe event but product(cf. Anderson
(1983), Chomsky(1985), Lebeaux(1986), Walinska de Hackbeil
(1984)). It will be claimed, roughly speaking, that nominals
on action reading have θ-grid and are involved in θ-marking
to complement PP and genitive NP while nominals on product
reading have no θ-grid and are not involved in θ-marking.

1. Two Interpretations of nominals
1.1. Internal θ-marking

Let us begin by considering the following NP whose head N
painting is ambiguous:

(1) John's painting of the church

On one reading, painting expresses an product and the whole NP
may be paraphrased as what John painted of the church. On the
other reading, painting expresses an action and the whole NP may
be interpreted as expressing an event in which John painted the
church. Thus, we may consider (1) to be ambiguous as to whether
head N has action reading or it has product reading.

Note that PP following the head N behaves distinctly as to
extractability of element out of it depending on the interpreta-
tion of the head N. Consider the following contrast:

(2) What did John witness the painting of?(painting=action)
(3) *What does John like the paintings of?(painting=product)

Thus when head N <u>painting</u> has action reading, extraction is allowed out of PP following the head N in (2). On the other hand, when <u>painting</u> has product reading, extraction is disallowed as in (3). The asymmetry as to extraction above reminds us of Huang's(1982) Condition on Extraction Domain (henceforth, CED) to the effect that extraction out of complement phrase is good but not out of adjunct phrase:

> (4) Condition on Extraction Domain
> A phrase A may be extracted out of a domain B
> only if B is properly governed.(Huang(1982. 505))

The contrast between (2) and (3) would then be explained by the CED if we assume the following principle of internal θ-marking in (5) and the licensing condition in (6).

> (5) Nominals on action reading have θ-grid and are
> involved in internal θ-marking to complement PP
> while nominals on product reading have no θ-grid
> and are not involved in internal θ-marking.

> (6) Elements with θ-roles are licensed as
> argument/complement while elements without
> θ-roles are licensed as adjunct up to
> compatibility in semantic interpretation.

Given (5) and (6), the CED correctly predicts that extraction out of θ-marked PP is allowed in (2) but not out of non-θ-marked PP in (3), since in (2) wh-movement extracts an element out of complement phrase and in (3) wh-movement extracts an element out of adjunct phrase.

Similar asymmetry involving the bipartite nominal interpretations seems to be observed in nominals without suffix as Mona Anderson(personal communication) suggested to me:

(7) Who did you witness the gift. of a book to?

(gift=action)

(8) *Who did you see the gift of a book to?(gift=product)

The asymmetry noticed above seems to have implications for Empty Category Principle(henceforth, ECP) in (9) as well, since the ECP allows operations involving complement PP which is properly governed but disallows operations involving adjunct PP which is not properly governed.

(9) Empty Category Principle:

[e] must be properly governed

The following paradigm of Pied Piping of PP seems to attest this point, as Howard Lasnik(personal communication) suggested to me:

(10) Of what city did you witness the destruction?

(destruction=action)

(11) *Of what book do you like the gift?(gift=product)

(12) Of what did you witness the painting?(painting=action)

(13) *Of what do you like the painting?(painting=product)

The ungrammaticality above is what the ECP expects, since PP following nominal on product reading is not θ-marked by (5), is licensed as adjunct by (6) and is not properly governed. Thus standard ECP violation obtains. The following asymmetry as to LF-movement of wh-in-situ construction as well seems to suggest that the ECP effect is present in the bipartite inter-pretations of head N:[1]

(14) Who witnessed the destruction of what?

(destruction=action)

(15) *Who likes the gift of what book?(gift=product)

(16) Who witnessed the painting of what?(painting=action)

(17) *Who likes the paintings of what?(painting=product)

The ungrammaticality of (15) and (17) follows from Chomsky's
(1981) assumption that P is not a proper governor coupled with
Kayne's (1984) assumption that N resists reanalysis, since the
traces left by LF-movement remain unproperly governed.

1.2. External θ-marking

In the preceding subsection, we claimed that nominals on
action reading have θ-grid and are involved in internal
θ-marking while nominals on product reading have no θ-grid
and are not involved in internal θ-marking. In this subsection,
we turn our eyes to external θ-marking property in NP, based
on the bipartite nominal interpretations noticed above.

Consider the following sentence which has traditionally
been claimed to be ungrammatical due to the binding theory
violation:

(18) They saw [Mary's pictures of each other].

Chomsky(1981), for instance, claims that the governing category
for <u>each other</u> is the minimal NP, since it contains an accessi-
ble SUBJECT in its SPEC position. But there is no licit binder
for <u>each other</u> in the domain, thus (18) is ruled out by the
binding theory. Notice, however, that, as discussed in Oka
(1986), this sentence is ambiguous depending on the interpreta-
tion of <u>Mary</u>, namely, <u>Mary</u> may be interpreted either as the
agent of taking pictures or as the possessor of pictures.
Following Chomsky's(1985) idea that agent θ-marking is made by
head nouns whereas possessor θ-marking is not(cf. Anderson
(1983)), assume that on the former reading <u>pictures</u> has θ-grid
and is involved in external θ-marking to <u>Mary</u> whereas on the
latter reading <u>pictures</u> has no θ-grid and are not involved in
external θ-marking to <u>Mary</u>. With this distinction in mind,
I propose a refinement of the notion of SUBJECT:

(19) NP that is θ-marked externally is SUBJECT.[2]

Given this refined definition of SUBJECT, (18) has distinct
governing categories for each other depending on the inter-
pretation of Mary. Thus the governing category for each
other on the former interpretation, Mary being an agent, should
be the minimal NP, since there is an accessible SUBJECT Mary
in SPEC licensed by (19), whereas the governing category for
each other on the latter interpretation, Mary being a possessor,
should be root S, since Mary without a θ-role does not count as
accessible SUBJECT due to (19). Then we expect to find (18) to
be ruled out on the former interpretation, since there is no
licit binder for each other in its governing category, but to be
ruled in on the latter interpretation, since there is a licit
binder they in its governing category. This prediction is
born out(cf. Oka(1986) for discussion on this topic):

    (20) *They saw Mary's pictures of each other.(Mary=agent)

    (21) They saw Mary's pictures of each other.

                                                 (Mary=possessor)

The same contrast seems to obtain in Japanese as well:

    (22) *Karera-wa Merii-no otagai-no   shashin-o   mita.

                                              (Merii=agent)

        They-nom Mary-gen each other-gen pictures-acc saw

    (23)   Karera-wa Merii-no otagai-no shashin-o mita.

                                               (Merii=poss)

Osvaldo Jaeggli(personal communication) pointed out to me that
a similar asymmetry is attested in Spanish, too, in which
genitive phrase is placed on the right side of head noun:

    (24) *Ellos compraron el retrato de los unnos y los oeros

        they   bought   the potrait   of each other

        de Juan.(Juan=agent)

        of John.

(25) Ellos compraron el retrato de los unnos y los oeros
de Juan.(Juan=poss)

Although "*" vs. "ok" may perhaps be overstated, it seems clear
to us that there exists discernible difference here which is
overlooked in previous studies.

To sum up, what we have been discussing in this subsection
may be stated as in (26):

(26) Nominals on action reading have θ-grid and are
involed in external θ-marking while nominals
on product reading have no θ-grid and are not
involved in external θ-marking.

The external θ-marking systems in (26) may be generalized
into (27) by incorpolating internal θ-marking system in (6):

(27) Nominals on action reading have θ-grid and
are involved in θ-marking while nominals on
product reading have no θ-grid and are not
involved in θ-marking.

3. Some consequences

This section discusses some consequences following from our
θ-marking system in NP stated in (27). First of all, consider
the following pair:

(28) John took pictures of Mary.
(29) John burned pictures of Mary.

(cf. Bach and Horn(1976))

Notice that in the context of (29) <u>pictures</u> may denote a
product, which suggests that the nominal has no θ-grid and is
not involved in internal θ-marking just as a noun denoting a
physical entity, say, <u>desk</u> is not, while <u>pictures</u> in (28)
coupled with <u>take</u> may be considered to expresses an action,

which suggests that the nominal has θ-grid and is involved in internal θ-marking just as a predicate denoting an action, say, hit is. If this is correct, then it is predicted that the PP following the nominal in (28) should be licensed as complement due to the internal θ-marking by pictures whereas the PP in (29) should be licensed as adjunct due to the absence of internal θ-marking by pictures. This idea is, in fact, given support by the following paradigm of extraction:

    (30) Who did you see pictures of?

    (31) *Who did you burn pictures of?

The second consequence following from our θ-marking system is related to the following paradigm discussed in Oehrle(1975):

    (32) John gave Mary a kick.

    (33) John gave Mary a kick at the girl.

Note that the sentences with superficially similar strings have distinct interpretations as to the kicker. Thus, in (32) it is John that kicked whereas in (33) it is Mary. To understand this distinction clearly, consider the next paradigm:

    (34) John gave Mary a present.

    (35) John gave Mary to understand that he was honest.

Metaphorically speaking, (34) describes a situation in which a present moves from John to Mary, and in parallel to this we may interpret (32) to describe a situation in which a kick moves from John to Mary, thus John kicks Mary. Now note Cattell's(1985) interesting observation to the effect that give has a causative use shown in (35), namely, John caused Mary to understand that he was honest. In parallel to this, we may interpret (33) to describe a situation in which John caused Mary to kick the girl, thus Mary kicked the girl.[3] Let us suppose that kick in (32), like a physical entity present

in (34), has no θ-grid and is not involved in θ-marking
while <u>kick</u> in (33), like a predicate <u>understand</u> in (35), has
θ-grid and is involved in θ-marking. Given this, it follows
that (32) and (33) have the following representations:

(36) John gave Mary a kick.

(37) John gave Mary$_i$ a PRO$_i$ kick at the the girl.

Note that in (37) external θ-marking by <u>kick</u> creats prenominal
PRO which is related to <u>Mary</u> by control theory(cf. Jackendoff
(1987)). The representation in (37) has an interesting impli-
cation for the binding theory. Consider the next sentence
containing an anaphor:

(38) The boys$_j$ gave the girls$_i$ [PRO$_i$ kicks at each other].

In (38) the governing category for <u>each other</u> is the minimal NP,
since there is an accessible SUBJECT, PRO, in SPEC linked to the
<u>the girl</u> by control theory. It follows then that <u>each other</u>'s
coindexing with <u>the girls</u> sharing an index with PRO, should be
licit due to the presence of an accessible SUBJECT in its
governing category NP, while <u>each other</u>'s coindexing with
<u>the boys</u> not sharing an index with PRO should be illicit due
to the lack of an appropriate accessible SUBJECT in its govern-
ing category. Although either coindexing relation is cognitive-
ly well imaginable, the prediction we have just made is born out:

(39) *The boys$_i$ gave the girls kicks at each other$_i$.

(40) The boys gave the girls$_i$ kicks at each other$_i$.

Consider another pair of the <u>give-a-kick</u> paradigm:

(41) John gave Mary a look.

(42) John gave Mary a look at the classroom.

In (41) it is John that looked and in (42) it is Mary, a pattern

parallel to the interpretations of the give-a-kick paradigm
above. Notice, however, that (42) is in fact ambiguous. On one
reading, at the classroom, John looked at Mary and on the other,
John permitted Mary to look at the classroom. This ambiguity is
resolved by wh-movement:

(43) Which classroom did John give Mary a look at?

Thus the sole reading that (43) has is the causative one, namely
Mary looked. This fact follows straightforwardly if we assume,
as has been claimed, that causative look has θ-grid and is
involved in internal θ-marking to the PP following it with the
PP being licensed as complement, whereas non-causative look has
no θ-grid and is not involved in θ-marking to the PP following
it with the PP being licensed as adjunct. Thus the prohibition
against extraction out of adjunct phrase excludes the non-
causative interpretation where PP is licensed as an adjunct
phrase(cf. Huang(1982)).

The third consequence following from our θ-marking system
is related to Case properties. As shown in (44), in Japanese,
non-arguments may appear with the nominative Case marker ga,
which Kuroda(1984) refers to as major subject(cf. Kuno(1973)):

(44) Nihon-ga   dansei-ga tanmei da.
      Japan-nom male-nom   short-life-span.
      (it is in Japan that men have a short life-span.)
(45) Los Angels-ga   nihonjin-ga   ooi
      Los Angels-nom Japanese-nom   many
      (It is in Los Angels where there are many Japanese
      people)

However, it is not that major subject is allowed without any
constraint. Consider (46):

(46) *Sono hon-ga   John-ga   yonda.

     that book-nom John-nom read

     (It is that book that John read.)

Kuno(1973) proposes a descriptive generalization to the effect
that only NPs modifying the subject and locative phrases in
existential sentences may become a major subject. This general-
ization correctly rules in (44)-(45) and rules out (46). Notice,
however, that, as Shinji Saito(personal communication) points
out, not all NPs modifying the subject NP can become a major
subject. For instance:

(47) Chomsky-ga hon-ga   yoku ureru.

      Chomsky-nom book-nom well sells well.

      (It is Chomsky's books that sells well.)

(48) *Chomsky-ga hon-ga   yogoreteiru.

      Chomsky-nom book-nom is dirty

      (it is Chomsky'sbook that is dirty.)

It seems that the predicates in (47) and (48) cause the asym-
metry involving major subject above. To see what principle
yields the asymmetry, consider the following pair in which major
subject in (47) and (48) are expressed with genitive particle
no.

(49) Chomsky-no   hon-ga   yoku ureru.

      Chomsky-gen book-nom well sell

      (Chomsky's books sell well.)

(50) Chomsky-no   hon-ga   yogoreteru.

      Chomsky-gen book-nom is dirty

      (Chomsky's books are dirty.)

In my judgement, Chomsky in (49) may be interpreted as an agent
writing books but in (50) that interpretation is difficult to
obtain and may be interpreted as adjunct, say, a possessor of
books. Let us assume that head Ns hon in (47) and (49) has

θ-grid and is involved in θ-marking to <u>Chomsky</u> and that head N
<u>hon</u> in (48) and (50) have no θ-grid and are not involved in
external θ-marking to <u>Chomsky</u>.

This asymmetry in external θ-marking seems to cause the
difference in grammaticality containing major subject in (47)-
(48). To see this point, let us consider the syntax of major
subject. Saito(1985) argues that major subject does not involve
movement but is base generated in situ. His claim is motivated
by evidence such as (51) in which major subject does not seem to
bind any element:

(51)   gengogaku-ga   itiban sotsugyoo-ga   muzukashii.
       linguistics-nom most   graduate-nom   difficult
       'Linguistics is the field where it is difficult to
       get a degree'

Following Saito, I assume that major subject is base generated
in situ. Note that in (47) in question external θ-marking of
head N <u>hon</u> creates prenominal PRO, which may be related to major
subject <u>Chomsky</u> by control theory, as in (52):

(52)   NP-ga$_i$ [np PRO$_i$ NP-ga]...

(52) seems to violate no principles. On the other hand,
<u>hon</u> (48) has no θ-grid and is not involved in external
θ-marking, which suggests that there is no PRO in prenominal
position. Thus we may successfully rule out (48) as a violation
of Full Interpretation to the effect that every element must be
licensed by some physical interpretation(cf. Chomsky (1985)),
since major subject in (48) remains unlicensed. Alternatively
if we assume that major subject is in A'-position, then (48)
may be ruled out as a violation of prohibition against vacuous
quantification as in *<u>who did John see Mary</u>?, since the major
subject in question may be undrstood as a vacuous quantifier
that binds no variable. I assume that in (51) head N <u>sotsugyoo</u>
('graduation') has prenominal PRO, which is related to major

subject by control theory.

3. Conclusion

In this note we have briefly discussed two types of inter-
pretations of nominals. We claimed that on action reading
head nominals have θ-grid and are involved in θ-marking while
on product reading head nominals have no θ-grid and are not
involved in θ-marking. We have examined some consequences
following from our assumptions. See Endo(in prep.) for discus-
sion on this topic in detail.

Appendix

Here some consequences following from the definition of
SUBJECT in (19) are examined. Consider the following double
object constructions we have discussed above:

    (1)   John gave Mary a kick.

    (2)   John gave Mary a kick at the girl.

It is generally observed that indirect object cannot be
extracted by wh-movement in double object constructions:

    (3)   John gave Mary books.

    (4) *Who did John give books?

We have assumed that <u>kick</u> in (2) has θ-grid and is involved in
θ-marking. If <u>Mary</u> is interpreted as SUBJECT, not indirect
object, in (2) due to external θ-marking from <u>kick</u>, then we
expect <u>Mary</u> to be extractable by wh-movement, since it is not
interpreted as indirect object but SUBJECT in a sense. Indeed
this is the case:

    (5)   Who did John give a kick at the girl?

   cf. *Who did John give a kick?

The second consequence is related to the following paradigm

of Control:

    (6)   the destruction of the city to prove a point

    (7) *the city's destruction to prove a point

Roeper(1986) posits PRO in prenominal position as in (6):

    (8)   the PRO destruction of the city to ptove a point

Roeper claims that (7) is ruled out because PRO is erased by
NP-movement of <u>the city</u> to the position PRO occupies, thus the
PRO interpretation is broken up. Williams(1985), on the other
hand, claims that there is no PRO in prenominal position, and
(7) is ruled out by the condition that a controller must be a
constituent. Note that SPEC and the head noun is not a constit-
uent.

    Although a choice between the two approaches is not
straightforward, our theory developed above may give a piece of
indirect evidence in favor of the position taken by Roeper and
Chomsky. Consider the next sentence:

    (9)   John gave Mary a review of the book.

This sentence has the following representation, the interpreta-
tion of which is that John allowed Mary to review the book:

    (10)   John gave Mary$_i$ [a PRO$_i$ review of the book].

Note that the bracketted minimal NP seems to be able to have
passive nominal form:

    (11)   the book's review by Chomsky

The passive nominal, however, is barred in the context of (10):

    (12) *John gave Mary the book's review

If Chomsky and Roeper are correct, then the ungrammaticality of
(12) follows straightforwardly, since NP-movement of the book to
the prenominal position erases PRO in the position, thus PRO
interpretation is broken up. On the other hand, Williams cannot
handle the ungrammaticality in (12) elegantly, since what is
involved in (12) is not constituency of a controller but a
controllee. Notice that the controller is Mary and controllee
is PRO in (10). Williams would be forced to stipulate that not
only a controller but also a controllee must be a constituent,
and has to explain why this is so.

NOTES

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topic. Thanks also go to Wayne Lawrence, Michael Watson and
Charles Wordell for acting as informants. The responsibility
for the remaining errors, needless to say, is my own.
1 Steven Abney(personal communication) reported to me that wh-
in-situ constructions as in (14)-(17) is better when SPEC is oc-
cupied by a than when occupied by the or John's, which suggests
that specificity constraint may be operative in LF-movement.
2 Roeper(1986b) and Chomsky(1987) suggest that there may be two
SPEC positions by presenting such sentence as (i):
    (i) Yesterday's people's revolution is today's dictator's
           paradise.
We may interpret that NP has two SPEC positions and that
θ-marked NP occupies the inner SPEC position such as people's
in (i) while non-θ-marked NP occupies the outer SPEC position
such as yesterday's in (i). See Endo(in prep.) on this point.
        Toshifusa Oka(p.c.) pointed out to me that the definition
of SUBJECT in (19) cannot handle the following sentences:

(ii) John was killed by himself.

(iii) They were introduced to each other.

(iv) They seem to each other to love Mary.

This difficulty may be overcome if we assume the following
definition of subject, as T. Oka(p.c.) suggested to me.

(v) NP that is in a potential external position and is a
member of a chain headed by an argument.

3 The exact paraphrase of (33) is the one with permissive force.
I will use the term "causative" in a somewhat extended sense to
include permissive force in the discussion to follow.

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Institute of Literature and Linguistics
University of Tsukuba