ABSTRACT
        The purpose of this paper is to demonstrate that
children's use of Japanese case particles obeys the grammatical
principles introduced at the earlier stage of language development.
In previous studies concerning the acquisition of Japanese case
examined through the experimental method, it has been suggested that
children acquire the functional use of case particles at around 5
years of age. This study examines the performance of Japanese case
particles in children's natural speech in 2- to 5-year-olds within
the framework of the theory of generative grammar. Data focusing on
the phenomena "case marker drop" is analyzed. In conclusion, this
paper demonstrates that 2-year-olds use Japanese case particles in
much the same way that adults do and it will be further suggested
that their use of case particles obeys the hierarchical structure of
the Japanese language as well as that of the semantic structure.
(VWL)

THE PERFORMANCE OF THE JAPANESE CASE PARTICLES IN
CHILDREN'S SPEECH: With Special Reference to
ga and O

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1. INTRODUCTION

The study of first language acquisition in Japan has been examined through collecting a certain specific child's utterances extended over a long time and designing experiments. We find, however, that there are very few studies combined with linguistic theory.

The main purpose of this paper is to demonstrate that children's use of the Japanese case particles obeys the grammatical principles introduced at the earlier stage of language development. In previous studies concerning the acquisition of Japanese case particles examined through the experimental method, it has been suggested that children acquire the functional use of case particles at around 5 years of age. (Hayashibe,1975; Sano,1977; Iwatate,1980; Hakuta,1982; Goto,1988; and others) This study examines the performance of Japanese case particles in children's natural speech in 2 to 5-year-olds within the framework of the theory of generative grammar. I will analyze the data focusing on the phenomena of 'Case marker drop'.

In conclusion, this paper demonstrates that 2-year-olds use Japanese case particles in much the same way that adults do and it will be further suggested that their use of case particles obeys the hierarchical structure of the Japanese language as well as that of the semantic structure.

1.1 Assumption on the modularity of language acquisition process

The process of the language acquisition has been discussed among the linguists for many years. It involves several aspects of the human mind: the physical development, cognitive
mental development and the development of pragmatic social skills. The child must learn and comprehend the meaning of individual lexical items and sentences. He or she, then, must understand the linguistic form and put the form into proper use in real situations. He or she, then, finally acquires the language which is based on correct grammar.

Within the framework of the theory of generative grammar developed by Chomsky and others, acquisition of a language is achieved by Language Acquisition Devise (LAD) which the human possesses innately. LAD

consists of an initial stage of grammar called Universal Grammar, which has a small number of principles and some principles of learnability for individual languages[2] Intake data[3] which the child gets during the acquisition process makes UG active and this UG is realized as a core grammar of a particular language. In this paper I shall assume the module of language acquisition is that of Input Data + UG + Cognitive capacity.

1.2 The relation of semantic and syntactic structure

In preceding studies pertaining to early word comprehension and production, is suggested that the onset of comprehension is in advance of production and there is a tendency that children comprehend action words better than objects words in the early stage of utterance. (Benedict,1979) Cognitive semantic categories and syntactic categories relate reciprocally during the acquisition process. Grimshaw defines this process as Canonical Structural Realization(CSR). CSR(object) is projected on the nominal, and CSR(action) is projected on the verb in syntactic categories.

Verbs assign O-role directly or indirectly to the lexical items and each O-marked lexical item is projected on the syntactic structure by O-criterion.

The O-roles assigned to NPs are Agent, Theme, Goal, Source, Location, Patient, Experiencer, and Proposition as shown in (1).

(1) a. <u>Taro-ga</u> <u>hon-o</u> <u>tukue-no-ue-ni</u> <u>oi-ta</u>.
       Agent   Theme   Location
       (Taro put a book on the desk.)

   b <u>Jiro-ga</u> <u>hana-o</u> <u>Junko-ni</u> oku-t-ta.
       Source   Theme   Goal
       (Jiro presented flowers to Junko.)

   c. <u>Taro-ga</u> <u>Jiro-o</u> tata-i-ta.
       Agent   Patient
       (Taro hit Jiro.)

   d. Sono news-wa <u>kare-o</u> odoroka-se-ta.
                    Experiencer
      (The news suprised him.)

   e. Kare-wa Hanako-ni <u>isha-ni-iku-youn</u>ı
                    proposition
      settoku-shi-ta.
      (He persuaded Hanako to go to see the
      doctor.)

A child who acquired a verb,'<u>oku</u>' (put) knows that the verb selects three arguments — [<u>Agent</u>, Theme, Location]. In other words, he/she who has

that the verb selects three arguments — [Agent, Theme, Location]. In other words, he/she who has acquired the verb, 'oku', knows that 'an Agent puts something on somewhere'.

Thus I put two hypotheses together in order to examine children's performance of case particles: 1) the function of the grammatical structure starts working at the early stages while the onset of the language acquisition is triggered by the cognitive capacity. 2) children use both semantic features and syntactic ones for their performance of their mother tongue from the early stage of language development.

2. Case marker drop in adult speech

Japanese case particles play the role of representing the grammatical relation of the noun phrase in a sentence but it is sometimes deleted in colloquial expressions. We will look at what makes this deletion possible through a theoretical hypothesis. Theoretical assumptions are made through examining three aspects — subject/object asymmetry, a stative sentence and unaccusative construction.

First, Saito(1985) suggested that the nominative Case marker can not be dropped whereas the dative case can be dropped as shown in below (2).

(2) a. Dare-*(ga) ki-ta-no
       who-NOM   come-PAST-Q
       'Who came?'

    b. (Kimi-wa) nani(-o) yonde-ru-no
       you-TOP   what-ACC reading-PRES-Q
       'What are you reading?'
                              [Saito(1985) p.230]

Saito argued that this subject/object asymmetry with respect to the "Case marker drop" is derived from the difference of the Case assigned to each position. He assumes that object NPs in Japanese are assigned abstract Case but subject NPs are assigned nominative Case by INFL which is not abstract. Thus, the object Case marker assigned abstract Case to the NP can be dropped while the subject Case marker can not be dropped.

In contrast with Saito's analysis, Takezawa(1987) pointed out that there exists contexts where Case marker <u>ga</u> can be dropped. He argued that Case marker <u>ga</u> can be dropped in contexts of stative predicate, which we unconsciously accept as illustrated below in (3)

(3) a. Kimi-ni nani-(ga) wakar-u-no
       you-DAT what-NOM   understand-PRES-Q
       'What do you understand?'

b. Kimi-ni   dono   mondai(-ga) deki-ru-ndai
   you-DAT which problem-NOM can-do-PRES-Q
   'Which problem can you do?'
                              [Takezawa(1987) p.124,125]

He analyzed that the NPs assigned _ga_ in stative
contexts have the object status and proposed the
generalization of 'Case marker drop' on the premise
that surface Case is an abstract Case as shown below.

(4) When an NP is adjacent to and c-commanded by V,
    then the Case marker attached to it (whether _o_
    or _ga_) can be dropped.
    Case Marker Deletion (optional): Delete _o/ga_ if
    the NP containing them is adjacent to and c-
    commanded by V in PF.
                              [Takezawa(1987) p.126]

     Another phenomenon of dropping _ga_ is pointed out
by Nishigauchi(1992).   He proposed the construction
of the unaccusative sentence where the subject has
Theme O-role and   the verb has two functions —
transitive and intransitive such as 'aku' vs. 'akeru'
(open).   He analyzed that the subject NP in
unaccusative sentence was generated onto the object
position and that the case marker _ga_ could be
dropped.[5]

(5) a. Ah, doa-(ga)   a-i-ta!
       Oh, door-(NOM) open-PROG-PRES
       (Oh, the door opened!)

    b. Asoko, nani-(ga) ochi-te-ru-ka mi-te- kite.
       (Go and see what is on the ground over there.)

                              [Nishigauchi(1992)pp.45]

As a result of his analysis of case marker _ni_ and
preceding   studies   of   the   'case   marker drop'
(Saito(1985), Shibatani(1986)), Nishigauchi suggested
the following conditions of case marker drop.

(6) The condition of Case marker drop:
    (i) governed by lexical category that
        assigns Case
    (ii) adjacent to it and
    (iii) receive strong s-selection of the lexical
        category

     Here I assume that the conditions of the 'case
marker drop' suggested by Nishigauchi(1992), that can
be represented as follows.

```
                    I'
           VP              I
      NP        V'
      |     NP      V
      ga    |
            (o),(ga)
```
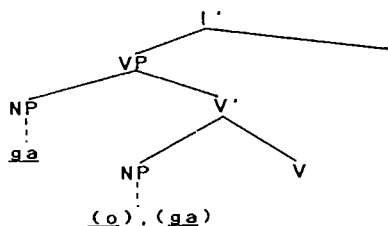
3. Performance of case particles in children's speech

3.1 The data for analysis

In this section I analyze the use of case
particles in children's natural speech focusing on
'Case marker drop'. I use three source shown in (7).
The data in (a) and (b) are from individual children
and data (c) contains 2500 utterances of 2 to 9 year-
olds from various areas in Japan.

(7)
    (a) Data of a three-year-old girl for the
        duration of 6 months
    (b) <u>Youji no Kotoba Shiryou (1),(5)</u>, National
        Japanese Research Institute
    (c) <u>Kodomo no Kotoba</u>, Group Eruson

3.2 The data analysis

In section 2, I represented the phenomena of
'case marker drop' in adult speech and the conditions
requisite for it, which obey the structural position
of the Japanese language. That is, the case particle
<u>ga</u> which assigned to NP in subject position can not
be dropped whereas the case particle <u>ga</u> and <u>o</u>
assigned to the object position can be dropped. How
do native Japanese children, thus, make the
distinction between the particles <u>ga</u> and <u>o</u> when
acquiring language? In preceding tudies, it was
pointed out that a child comes to utter case
particles at approximately 20 months to 26 months and
he/she understands a sentence using the knowledge of
case particles after four and a half years. If this
is true, the following question will naturally arise.
How do children especially under the age of 5 years
use these case particles readily and correctly
without having any formal grammatical background? To
examine this interesting point I will analyze
toddlers' spontaneous speech. The data containing
subject and object were classified by age and

analyzed according to the categories which were
distinguished from the positions on the structure as
shown below (8).

(8)
A. Classification of case particle 'ga'

    a. 'ga' assigned to NP of subject position

    b. stative predicates
       1. adjective, stative predicate
         eg. "aru"(exist),"ooi"(many),"sukunai"(few),
           "iru"(need)
       2. NP of the object position with stative
         predicate
         eg. subject marked <u>ga</u> with follow predicates
           "wakaru"(understand), "dekiru"(can),
           "kikoeru"(hear), "hoshii"(want),
           "sukida"(like)

    c. subject marked <u>ga</u> in an unaccusative
      construction

    d. dropping <u>ga</u>

B. Classification of case particle <u>o</u>

    a. object with <u>o</u>

    b. object dropped <u>o</u>

    Firstly, I analyzed the data of four to five
years old children, who are said to have already
acquired the knowledge of case particles. Among 180
cases containing a subject, 162 cases were with the
overt case particle <u>ga</u>. That is, I found 18 cases
dropped case particle <u>ga</u>. However I analyzed that
these NPs which dropped <u>ga</u> were all classified to A-b
and A-c in the above classification (8) except in one
case. This means that those NPs dropped the case
particles belonged to object position in the
structure. As for the cases containing an object,
among 144 cases with an object, the cases with overt
<u>o</u> were 42.
    From the results of the analysis of 4 to 5-year-
olds, it was observed that they didn't drop case
particles which were assigned to the subject
position, while they tended to drop case particles
assigned to the object position This feature also
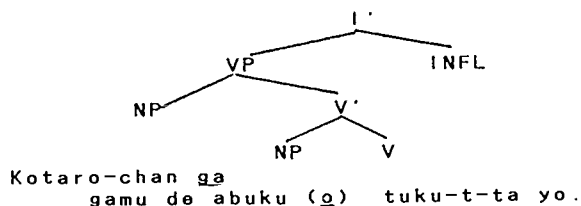tends to be true in adult's speech
    Then, how about younger children? Is this same
phenomena reflected in the speech patterns of even
younger children? The preceding studies suggested
that they have not acquired the grammatical function
of case particles yet. If this assumption is correct,

then, their speech performance should be
correspondingly different from those of adults'. I
analyzed the data for 2 to 3-year-olds according to
the above classification (8) and observed a specific
phenomena in their use of case particles. (Refer to
Appendix 1.)

Among 326 cases containing the subject, 47 cases
were uttered without the overt case particle ga and
furthermore, almost all the NPs without the overt
case particle ga were seen to be in the object
position — the sentences with stative predicate or
with unaccusative constructions. In the case of the
object, 123 cases out of 161 dropped case particle o.

The results of these analysis showed that the use
of case particles of 2 to 3-year-olds were the same
as those of adults': they do not drop the case
particle ga assigned to the subject position while
they tend to drop case particles ga and o assigned to
the object position.

(9) A 5-year-old Child's Utterance


```
              I'
         VP        INFL
    NP      V'
         NP    V
```

Kotaro-chan ga
        gamu de abuku (o) tuku-t-ta yo.

Kotaro-chan ga gamu de abuku (o) tuku-t-ta   yo.
Kotaro-chan NOM chewing gum with bubbles (ACC)
foam-PAST.
(Kotaro foamed bubbles with chewing gum.)

To sum up the results of the above analyses, I
have shown the following two points.

1. We found that there is an asymmetry between the
subject position and the object position with respect
to the case marker drop in toddlers speech. toddlers
don't drop the case particles ga on the subject
position while they often drop the case particles, ga
and o on the object position. Their use of case
particles is almost the same as that of adults

2 It is assumed that even 2-year-olds' usage of
Japanese case particles is related to the knowledge
of the syntactic structure.

3.3 Performance of ga and O by Thematic Relation

I put forth the hypothesis that both syntactic features and semantic ones are already developed from the early stage of language development. According to this hypothesis, the following question arose. What are the semantic features of the noun both on a subject position and an object position? We can predict that there should be specific semantic features in toddlers' use of case particles. In this section, I will briefly examine how the semantic features are related to the child's use of the case particles by focusing on the O-role which will lead to syntactic structure. I will reanalyze the data shown in (7).

The possible O-role for a subject are the Agent role (10(A)), the Theme role (10(B)), and the source role (10(C)).

(10)
  a. <u>Ken-ga</u> <u>Jiro-o</u> tata-i-ta.
     Agent Patient
     (Ken hit Jiro.)

  b. <u>Densha-ga</u> tu-i-ta.
     Theme
     (The train arrived.)

  c. <u>Taro-ga</u> <u>Hanako-ni</u> <u>shashin-o</u> oku-t-ta.
     Source   Goal   Theme
     (Taro sent a picture to Hanako.)

On one hand in it, then on the other hand, the possible O-roles for an object are the Theme role, the Patient role, and the Experiencer role. the Theme role can be assigned to both a subject and an object. Here I focused on the Agent role and the Theme role for this analysis. Verbs which select the Theme role as an argument have an 'action' meaning, that ts, it affects something by moved or being exchanged. Miyagawa(1989) defines the character of this affectedness as:

(21)
 A partial characterization of affectedness

  a. That which is exchanged:
    (tori)-Kaeru 'exchange'

  b. That which is created: tukuru 'make',
    kaku 'write', tateru 'build', kosiraeru
    'concot', hanasu 'speak', yobu 'call out',
    sakebu 'cry out'

  c. That which is converted: naosu 'correct,
    repair'

d.   That   which   is   extinguished,   consumed,
destroyed, or go; rid of: taberu 'eat', nomu
'drink', korosu 'kill', nakusu 'lose, get rid
of', usinau 'lose, wasureru 'forget'

[Miyagawa(1989)   SYNTAX AND   SEMANTICS: Structure   and
Case Marking in Japanese p.57]

All   these are,   however, semantic   characterizations.
we   need,thus,   to   define   the   notion   Theme   by   an
independent   test   for   the   syntactic   purposes.
Miyagawa suggested a test   for themehood. I adopt   the
test to distinguish Theme from the other O-role.

(22)   INDEPENDENT TEST FOR THEMEHOOD

The construction consisted of the gerundive   form
of the verb (-te/-de) plus aru allows a
transitive verb   that assigns   the Theme   role to
its object, which surfaces as the subject of   the
verbal complex V-te aru.

[Miyagawa(1989)]

For example,   akeru 'open' assigns   the Theme   role to
its   object but   aisuru 'love'   does not   according to
the test as shown in (23) and (24).

(23) Doa ga akete aru.
     Door NOM opened
     'The door is opened.'

(24)*Taro ga aisite aru.
          NOM loved
     'Taro is loved.'

I   analyzed   the   data   in   (7)   to   examine   the
relationships   between   the   thematic   property   and
children's use of the case particles.
A part of the data analysis is shown in Appendix   2

As a result of   the analysis, I found   that there
is a   definite contrast between the Agent role and the
Theme role.   Children do not   drop the   case particle
ga assigned   to the Agent   role while they often   drop
it assigned   to the Theme role.   As seen in the   above
section,   the case   particle o   assigned to   an object
position   can   be   dropped syntactically   and   it   is
suggested   that most of the NPs   which are dropped the
case   particle o   on the   object position   is assigned
the   Theme   role.   The   assumption   can   be   made,
therefore, that the case   particle ga assigned to   the
NP with the   Agent role is not dropped while   the case
particles assigned to the NP with the   Theme role tend
to be dropped.

4. Experiment
4.1 Purpose

I will present an experiment designed to investigate where or not toddlers have a grammatical knowledge of case particles when they interpret sentences. Through the analysis of children's spontaneous speech, it was found that children have the grammatical knowledge as well as the strategies based on meaning from the early stage of language development. In other words, children have two ways in which to express their language competence. They have to, however, depend on either one or another in order to interpret the meaning of a sentence in the case where both are not available. The experiment was, thus, designed to investigate whether or not children use grammatical knowledge in contexts where they can not interpret a sentence solely by its meaning.

4.2 Method

Subjects: 10 subjects, who are all mono-lingual native speakers of Japanese living in Osaka, were tested. 5 of them were 3-year-olds (range 3;3-3;9) and 5 of them were 4-year-olds (range 4;4-4;11)
Procedure: Each subject was tested individually. Seven types of stimuli sentences were presented, one at a time, as shown in (9):

(9) A: S-ga O-o Verb.   (S-NOM O-ACC V)
       Anpanman-ga Baikinman-o tataiteiru.
       (Anpanman is hitting Baikinman.)

    B: O-o S-ga Verb.   (O-ACC S-NOM V)
       Kirin-o Usagi-ga aratteiru.
       (A giraffe is washing a rabbit.)

    C: S-ga O-(*) Verb.   (S-NOM O-(*ACC) V)
       Kareinanman-ga Anpanman-(*) noseteiru.
       (Kareinanman is putting Anpanman on
       his back.)

    D: O-(*) S-ga Verb.   (O-(*ACC) S-NOM V)
       Neko-(*) Buta-ga oikaketeiru.
       (A pig is chasing a cat.)

    E: S-(*) O-o Verb   (S-(*NOM) O-ACC V)
       Usagi-(*) Buta-(o) ketteiru.
       (A rabbit is kicking a pig.)

    F: O-o S-(*) Verb   (O-ACC S-(*) V)
       Osaru-o usagi-(*) onbushiteiru
       (A rabbit is carrying a monkey on her
       back.)

G: N1-(*) N2-(*) Verb.
   Neko-(*) buta-(*) tataiteiru.

((*) means that the case particle is deleted.)

The pictures for the stimulus sentence A.

(Anpanman ga Baikinman o tataiteiru)
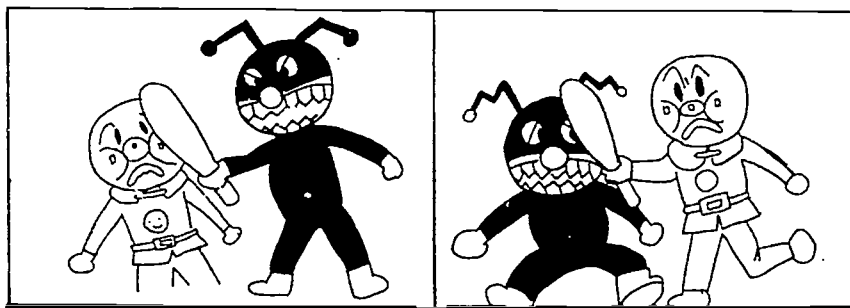
Japanese is basically an SOV language. The examples
A, C and E have the basic word order, while B, D and
F are scrambled sentences. No case particles are
assigned to the NPs in pattern G.
    Two pictures were shown to the subject
accompanied with the stimulus sentence. One picture
was drawn to match the stimulus sentence and the
other was drawn in the way that Agent and Theme in
the stimulus sentence were reversed as shown in below
example.
    All the stimuli sentences were recorded and given
out in order. The child was asked to select the
picture which matched the stimulus sentence.

Results: The results are summarized in Table 1.
These figures represent the correct response from the
viewpoint of adult grammar. The figure in pattern G
represent the response that the subject regarded the
N1 as a subject in the stimulus sentence.

Table 1

+	A	B	C	D	E	F	G
++	ga-o	o-ga	ga-( )	( )-ga	( )-o	o-( )	( )-( )
3	5	4	4	3	1	3	5
4	4	5	3	2	5	2	4

(+: PATTERN. ++: AGE)   THE UNIT: a man

4.3 Discussion

From the results, it clearly appeared that both 3 year-olds and 4 year-olds judged the first noun as the subject in the case where no case particles were given in the stimulus sentence as shown in the pattern G. They, however, interpreted the scrambled sentence (B) correctly when both nominative and accusative case particles are assigned to the NPs. On the other hand, when one of the case particles was deleted, the responses were different according to the selected patterns. This implied that word order was not the only variable used in judging the stimuli sentences. Thus, this results showed that not only 4-year-olds but 3-year-olds also have the ability to contextualize using their grammatical knowledge of case particles if given an accompanied context, that is, they can interpret the context by word order if there are no case particles included.

Further evidence of early Japanese interpretation of scrambled sentences which demonstrates that short-distance scrambling constitutes part of the grammatical knowledge of 3-year-olds acquiring Japanese as a first language is also of importance. Otsu (1992) conducted experiments and found that three-year-olds can manipulate scrambled sentences using their grammatical knowledge with almost error-free results if given an appropriate discourse context.

In addition to these experimental results, I would like to present 2-year-olds' reaction to a scrambled transitive sentence.' The children quickly and correctly responded to the stimuli sentences with both basic word order and scrambled word one. If they were, however, given a stimuli sentence in which the case particles were assigned improperly, they responded nothing and were furthermore embarrassed. Some children said 'What?' when the stimulus sentence was given It is suggested in previous experimental studies with a judgement task that early children have not yet acquired the grammatical knowledge of

1 4

Japanese case particles because they can not answer
'wrong' to the ungrammatical sentences (Goto;1988,
Nakayama;1988). If this is correct, how can we
explain the clear contrast between the reaction to
grammatical sentences and the ungrammatical ones? If
young children don't use the grammatical properties
of case particle to interpret grammatical sentences,
we should find their ambiguous responses to
grammatical sentences as well as ungrammatical
scrambled sentences. From my observation of two-
year-olds performance, it is possible to suggest that
even 2-year-olds use the grammatical knowledge of
case particles to interpret a sentence but they can
not judge whether it is correct or not because of
their immature cognitive ability. It is, thus,
concluded that infants have active grammatical
knowledge of case particles.

5. Conclusion

In this paper, I represented toddler's use of
case particles ga and o with respect to the 'case
marker drop'.
Although it has been suggested that Japanese children
acquire the grammatical function of case particles at
around 5 years, the data analysis in this paper has
showed that 2-year-olds use case particles in the
same way that adults do and also their use of them is
in obedience to the grammatical structure of
Japanese.
Children need to know grammatical relations such
like subject and object in a sentence in order to
understand. In Japanese, it is case particles that
play the important role in representing grammatical
relations in a sentence. As in a language like
English which restricts word order comparatively,
children acquiring English easily know the
grammatical relation by word order. Japanese, on the
other hand, is said to be comparatively free of word
order when compared with a language like English. It
is, thus, suggested that children acquiring Japanese
as a first language need to acquire case particles at
an earlier stage of language development to
distinguish between the different grammatical
relations in a sentence. Furthermore, it is assumed
from their usage of case particles that both
syntactic and semantic properties work as module from
the early stage of language development.

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NOTE

1. This paper is based in part on my Master's
    thesis, submitted to Osaka University, January
    1992. I am greatly indebted to Professor Taisuke
    Nishigauchi.   I also would like to thank to
    Professor Takao Gunji for his invaluable advice
    and suggestions. I would like to express my
    appreciation to Dr. Yukio Otsu for his insightful
    comments and suggestions. Any mistakes that may
    remain are entirely my own.

2. Weler K. and Manzini R.(1987) argue about the
    relation between these two kinds of principle as
    follows.
    "each   choice   that   the   child makes   in his or
    her growing language is determined by a principle
    of language or by a principle of learning or by
    the   interaction   of   these   two   kinds   of
    principles."

3. Nakayama(1988)   has   reffered   two   kinds   of
    linguistic data: The data   available in   the
    language enviornment are called "input data".
    They are to be distinguished from "intake
    data"(White, 1981), which are the data that are
    accessible to the child at a particular point in
    language development.

4. He points out that there is no possibility that
    the   dropped   maker   is   'wa'   not   'ga'   as
    interrogative nouns are not assigned topic marker
    'wa'.

5. Miyagawa(1989) analyzed the construction of the
    "ergative" sentence in which the verb selects the
    Theme role to the subject. According to his
    analysis, the subject of the intransitive verbs
    originates in the object position in D-structure
    and moves to the subject position at S-structure
    to acquire case because the ergative verb fails
    to furnish the case, as shown in (1).

6. Nishigauchi   analyzed   that   the   NP   assigned
    nominative case   maker   'ga'   in unaccusative
    construction   does   not   have   the   subjective
    characteristic but rather objective one. The NP
    in unaccusative construction is generated to the
    position governed by the verb. He suggests that
    the NP in the subject position corresponds to
    expletive in Japanese.

7. A pretest was designed to investigate children's
reaction to the improper stimuli sentences
against the given situation. The test was given
to 8 subjects ranging in age from 2-year-old to
5-year-old. The experimenter talked with the each
subject working puppets individually. The
discourse contained the following stimuli
patterns.

a)   S-ga   O-o   Verb
b)   O-o   S-ga Verb
c)   *O-ga   S-o   Verb
d)   *S-o   O-ga Verb

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APPENDIX 1

[2-year-olds' utterances with a subject]

Classification (a)

UTTERANCES	+
Akichan ga Ki-t-ta. (Akiko cut.)	a
Boku ga tuke-ta. (I attached.)	a
Boku ga oi-ta-no. (I put.)	a
Tomato to cheese ga ohanashi shite-ru-yo (The tomato and the cheese are talking to each other)	c
Wanwan ga hadashi de aruiteru! (The dog is walking with bare feet)	c
Kewpie ga suwa-t-te kangai-te-ru-yo. (The kewpie doll is sitting and thinking.)	c

[+: DATA SOURCE in (7)]

1 C

Classification (b)

UTTERANCES	+
Nani ga mieru-no?　　(What can you see?)	a
Doko ni hitode ga iru-no? (Where is the starfish?)	c
Okaasan, ochi no naka nimo ohisama ga iru-yo. (Mommy, there is a sun in the house, too.)	c
Onaka ga itai. (I've got a stomach ache.)	c
Ah, Takeshi no yama ga nai! (There isn't Takashi's mountain.)	c
Techhan, medaka no gakko ga iru-yo. (Techhan, here is a scholl for medakas.)	c

Classification (c)

UTTERANCES	+
Obaachan, ha ga kowarecha-t-ta no? (Gran-ma, are your teeth broken?)	c
Kono jam mushi ga tuite-i-ru yo. (There is an insect in this jam.)	c
Obaachan, te kara chi ga deteru yo. (Grandma, there's blood coming from your hand.)	c

[2-year-olds' utterances without the nominative
marker, ga]

	UTTERANCES	+
b	Onetsu (ga) aru yo. (He has fever.)	c
b	Ashi (ga) makkuro dato barei (ga) dekinaiyo (I can not play ballet with dirty legs)	c
c	Okaasan, otukisama (ga) yabuke-te-ru yo (Mommy, there's a half moon)	c

[2-year-olds's utterances with the object maker <u>o</u>]

Classification (a)

UTTERANCES	+
Ryukkusakku (o) mottoru-ka-ne? (Do you have a backpack?)	c
Okaasan, Tomochan oboshi (o) wasurecha-t-ta ne. (Mommy, I've forgotten my hat.)	c
Otosan, ashi (o) arainasai. (Daddy, wash your legs.)	c
Futon (o) orose. (Put the bedding down.)	c
Ice koori (o) taberu. (Eat ice.)	c

Classification (b)

UTTERANCES	+
Osora o tobitai-n-da-mon. (I want to fly in the air.)	c
Okaasan, kaze o ya-t-tuke-te, onegai. (Mommy, knock the wind over, please.)	c

APPENDIX 2

UTTERANCES	+	*
<u>Karasu ga</u> isoide ouchi ni kae-t-te-iku yo Agent (A crow goes home in haste.)	4	c
Kitto <u>okaasan ga</u> ma-t-te irun-da ne Agent (For sure Mother is waiting.)	4	c
<u>Otamajakushi</u> ga <u>zoukingake (o)</u> shiteru-n-da ne Agent Theme (Tadpoles are wiping with their clothes.)	4	c
<u>Kei ga</u> nao-shi-ta-n-da Agent (Something was repaired by Kei.)	4	c

(+: AGE OF THE CHILD, *: DATA SOURCE)

2)

UTTERANCES	+	*
<u>Kotaro-chan ga</u> gamu de <u>abuku (o)</u> tuku-t-ta yo. Agent Theme (Kotaro blew bubbles with his chewing gum.)	4	c
<u>Watashi ga</u> jibunn de tuku-t-ta no Agent (I made it by myself.)	4	c
Hakase ni na-t-te <u>taimumashin (o)</u> tuku-t-te.. Theme (I'll be the doctor and make a time machine..)	4	c
<u>Ochawan (o)</u> aratou Theme (Mommy is washing a rice-bowl.)	4	c
Nande <u>konnakoto (o)</u> kaku no? Theme (Why are you writing such a thing?)	4	c
<u>Osora o</u> tobi-tai-n-da-mon Theme (I want to fly in the air.)	4	c
Boku datte <u>onaka (ga)</u> deteru zo. Theme (I also have a potbelly.)	3	c
<u>Gamu (ga)</u> tu-i-te ru Theme (Chewing gum is attached.)	3	a
<u>Futon (o)</u> oro-se. Theme (I put the bedding down.)	2	c
Datte yume ni <u>obake (ga)</u> uturu-n-da mon Theme (Because a ghost appears in the dream.)	3	c
Otousan <u>ashi (o)</u> arainasai Theme (Daddy, wash your feet.)	2	c
<u>Namae ga</u> ka-i-te-ari-masu Theme (The name is written down.)	4	c
Okaasan Tomochan <u>oboushi (o)</u> wasure-cha-t-ta ne Theme (Mommy, I forgot to take a hat with me.)	4	c

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UTTERANCES	+	*
Hora, <u>janba^(o)</u> kite-ru-de-sho Theme ((I) am putting on a Jacket.)	3	c
<u>Ofuton (o)</u> katazuke-ru-n-da yo Theme (Let's put the bedding in order.)	3	c
<u>Kore (o)</u> taberu to tuyoi otoko ni Theme nareru? (If I eat this, will I be come a strong man?)	3	c
<u>Mizu (o)</u> ire-te-kure Theme (Can you put water in (something).)	4	c