

Aspects of Child Language Development : Causativeness and performative sentence

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In this paper the writer attempts to show the inadequacy of the traditional psycholinguistic treatment of 'one-or-two word sentences' by making the following points:

- 1) Every sentence has a performative higher sentence which determines types of sentence such as 'command', 'request', 'question', 'statement' and so on.
- 2) The performative sentence is a part of innate linguistic universals and appears at the very beginning of language development.
- 3) 'Intransitive verbs' are basic and 'transitive verbs' are derived by imposing 'causativeness' on 'intransitivity'.
- 4) Children's sentences develop from deeper to more surface structures.

1. What is transformation ?

The conceptual structure of a sentence is very abstract by its nature because a sentence in its deepest form consists of a set of propositions embedded or nested one within the other forming a hierarchy of abstract propositional structures. Because of the limited capacity of human perceptual apparatus, a complex conceptual structure of a sentence cannot be produced or understood as it is. The role of transformation is to make abstract conceptual structures easy for us to produce or understand.¹⁾ In one sense, transformations have much to do with linguistic performance. Transformation is, as it were, a bridge between semantics (thought) and speech perception and production. The conceptual structure of a sentence has all the necessary information about what kind of transformations are to be applied and in which order. That is to say, the semantic structure of a sentence has 'transformational signals' according to which "transformational operations" are to be applied. It seems that the investigation of the development of transformations in child language so far has been concerned too much with the development of transformational operations without giving much thought to the development of transformational signals. The study of the acquisition of transformational operations alone does not have much relevance. The cause of this shortcoming may be attributed to the following two reasons.

The first reason is that the investigation of child language development has been too dependent on the classification of tape-recorded data without taking into account the contexts in which child sentences are produced. The contextual information of a child's sentence constitutes its semantic content. The investigation of transformational aspect of child language development which does not give due consideration to the

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contextual or semantic information tends to be a mere 'operationalism' or a 'taxonomy of superficial language phenomena'. Lois Bloom is one of the rare developmental psycholinguists who have paid attention to the semantics of children's speech. Bloom was right when she said:

"—evaluation of the children's language began with the basic assumption that it was possible to reach the semantics of children's sentences by considering nonlinguistic information from the context and behavior in relation to linguistic performance. ————— evaluation of an utterance in relation to the context in which it occurred provided more information for analyzing intrinsic structure than would a simple distributional analysis of the recorded corpus."²⁾ (underline is mine)

The second reason is that the investigators of child language acquisition have been using mostly Chomsky's *Aspects*' model as their theoretical framework.³⁾ The concept of deep structures in *Aspects* does not seem to give an adequate account of conceptual structures of a sentence. It seems to me that one inadequacy of *Aspects*' model is its description of 'imperative', and 'question' in the deep structure as simply positing transformational signals like 'I' or 'Q' outside a sentence. It would seem possible that those transformational signals could be more adequately described by assuming that they are performative higher sentences with speaker and hearer as its subject and object respectively and that its verb has features which signal 'imperative', 'question' or 'statement'.⁴⁾

2) Traditional treatment of one-or-two word sentences and its inadequacy:

Most developmental psycholinguists seem to have the notion that children start to learn to use one-word sentences when they are around 18 months old and that they gradually learn to use two or three-word sentences as they grow older. They believe that their job is to identify and classify the words children use according to their distributional similarities.

Most psycholinguists claim that children's first grammar is something like the following:

$$S \longrightarrow \begin{cases} N \\ V \end{cases}$$

because the only words they utter are single nouns or verbs like 'car, candy, go, come'. M. Braine described children's two-word sentences as consisting of the following two classes, 'pivot' and 'open'. R. Brown uses 'modifier' instead of 'pivot' and S. Ervin uses 'operator'. But they all agree in their basic ideas. Words in pivot classes are limited in number but occur repeatedly in combination with many other open class words. On the other hand, open class words rarely occur repeatedly but they are numerous. The criterion for the classification of the two classes is strictly "distributional". D. McNeill⁵⁾ who closely follows Braine's method proposes that children's competence has the following rule:

$$S \longrightarrow (P) + O$$

This rule says that pivot class words precede open class words and that open class words may occur alone without pivot class words.

From the above reasoning, we can set up the following rules as children's early grammars

$$(1) \quad S \longrightarrow \begin{cases} N \\ V \end{cases}$$

$$(2) \quad S \longrightarrow (P) + 0$$

What follows is a part of the result of a survey of language acquisition by American children that the writer made while he was studying psycholinguistics under Professor C. Osgood at the University of Illinois from 1966 to 1968. Christina who was 27 months old and spoke mostly one word sentences could ask questions. When she wanted to go out, she went to the door and said, looking at her mother's face:

(3) "Bye-bye?"

with a rising intonation. And when she wanted to eat cookies, she said:

(4) "Cookies?"

It was quite obvious from the situations in which those sentences were uttered that the meanings of the two sentences were:

(3)' May I go out?

(4)' May I eat cookies?

Now, if we describe the above sentences simply in the form of rule (1), how much of the semantics of the sentences can we convey? What we aim to describe is not the manifested utterances of children but the mental linguistic reality that underlies children's utterances.

A two year old girl uttered the following sentences:

(5) "Kore miru"
(this) (see)

(6) "Kore doku."
(this) (remove)

From the situational contexts in which the above sentences were produced, (5) means,

"I ask you to look at this."

and (6) means,

"I request you to remove this."

'Miru' and 'doku' should be morphologically changed to 'mite (choodai)' (Please look at) and 'dokete (choodai)' (please remove) respectively to make the two sentences fully grammatical. If we would use rule (2) to describe sentences (5) and (6) because 'kore' seems to be a pivot class word on account of its repeated occurrence, then how can we describe the underlying structural and semantic differences?

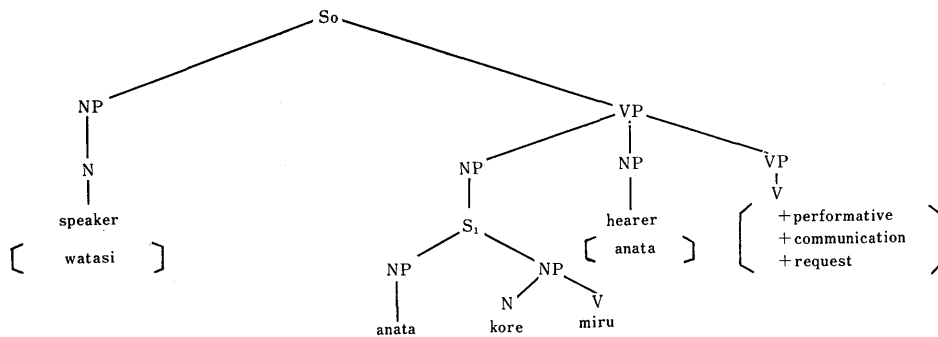
I suppose it has become quite clear by now how inadequate rules (1) and (2) are to describe the underlying competence of the children who produce one-or-two-word sentences. Developmental psycholinguists assert that 'one-word sentence' is not simply an imitation of a part of an adult's utterance but that it has a sentential status. I am in full agreement with them. But they do not seem to have clarified the true nature of one-or-two-word sentences.

3. The complexity of one-or-two-word sentences:

It has been already noted that what we aim at is not a classification of child's

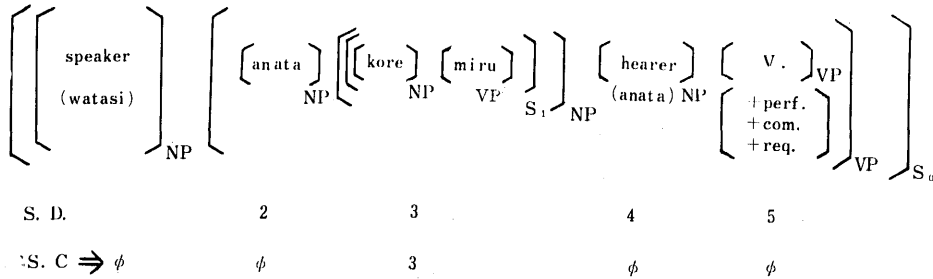
manifested utterances but the underlying semantic or conceptual structures of children's sentences. A child's linguistic performance is only a guide to his linguistic competence the description of which is our goal.

Let us try to describe the underlying semantic structures of sentences (5) and (6). Superficially, those two sentences are exactly alike. From their morphological endings, they look like simple, declarative statements but native speakers of Japanese can easily tell that their semantic structures are different. From the contexts the two sentences are undeniably 'requests' of the speaker to the hearer. The underlying structure of (6) would be something like the following:

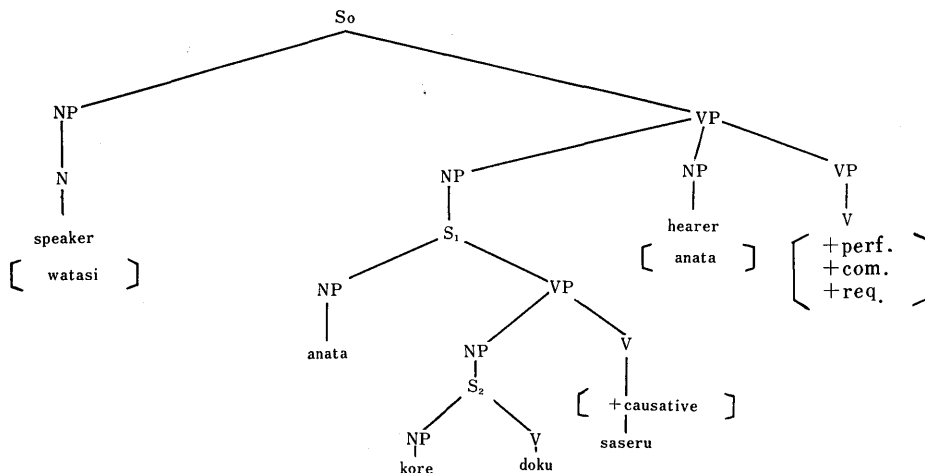


Tree diagram A

The manifested utterance (5) of the above conceptual structure seems to have been derived through reduction transformation:



The possible conceptual structure of (6) follows:



Sentence (6) was presumably derived in the following way:

Speaker				causative	hearer	V
Watasi	anata	kore	doku	saseru	anata	
S.D. 1	2	3		4	5	6
S.C.→ ϕ	ϕ	3		ϕ	ϕ	ϕ

All the following sentences of a three year old girl have the same conceptual structures and process of derivation:

Correct forms

- Chikazuichau [= Chikazukechau] (Someone causes something to get close to me.)
 Tomatte [= Tomete] (Please cause it to stop)
 Motto agatte [= Motto agete] (Please cause it to rise)
 Asi doite [= Asi dokete] (Please cause your foot to remove)
 Sagatte [= Sageete] (Please cause it to lower)

What is lacking in the above sentences is 'causativeness'.

So far, we have argued how inadequate so called 'pivot-open class grammar' is to account for child's linguistic performance.

Now, let us turn to more interesting questions. Why is it that most of the verbs children use at the beginning stage use 'intransitive verbs' for 'transitive verbs'?

The following utterances were produced by a 48 month old girl in quick succession:

- (7) Kore doku
 (8) Kore dokeru
 (9) Kore dokete (Please cause it to remove)
 =Remove it, please

She was given no model or correction but she uttered these sentences spontaneously as if she were testing her hypothesis. The very same day she produced the following sentences:

- (10) Motte kuru
 (11) Motte kite choodai

What can we learn from those sentences? First of all, we might say that (8) is conceptually more complex than (7) and (8) than (9). Why is this so? It may be easy to see that 'dokeru' is formed by adding 'causative verb' (saseru) to the intransitive verb 'doku', hence conceptually and cognitively more complex than 'doku'.

Incidentally, I have also observed the process of the derivation of 'dokeru' as follows:

- (12) dek u
 (13) dok asaseru
 (14) dok aseru
 (15) dok eru

It is interesting to note that children go from the form closest to the underlying representation to the more surface and simpler form. A friend of mine gave me the following evidence which he observed in his three year old son.

(16) atarasete (Try to hit)

The little boy learned to use the correct form 'atete' in due course of time. My daughter also produced the following utterance:

(17) Koko made atarasete goran. (Try to cause it to hit this.)

That children use the deeper form 'atarasete' which is almost never used in our daily speech seems to force us to conclude that 'intransitive' verbs are basic and 'transitive' verbs are derived by the imposition of some sort of 'causativeness' on 'intransitive' verbs.⁶⁾

Returning to the discussion of sentences (7)(8)(9), (7) is never used in our daily speech but (8) could be used as an 'imperative' instead of the usual forms like 'Dokeyo' or 'Dokero'. In terms of grammaticality, (8) is more grammatical than (7) and less grammatical than (9). By the way, 'te' of 'dokete' is an inserted complementizer because 'dokete' is usually followed by verbs like 'choodai' (literally 'please give me') which appears in (11). 'Dokete' even without 'choodai' signifies in most cases that it is a 'request'.

The fact that a child produced (10) and (11) in quick succession seems to show that she has two competing grammars in conflict. We can explain with ease from the above reasoning the ungrammaticalness of the following sentences of a two year old girl:

(18) Motto agatte (agete) Please raise it higher.

(19) (denki) tuite (tukete) Please turn on (the light).

She simply forgot to apply causative rules that would change 'agaru' to 'ageru' and 'tuku' to 'tukeru' respectively.

4. When do performatives appear in the acquisition of language?:

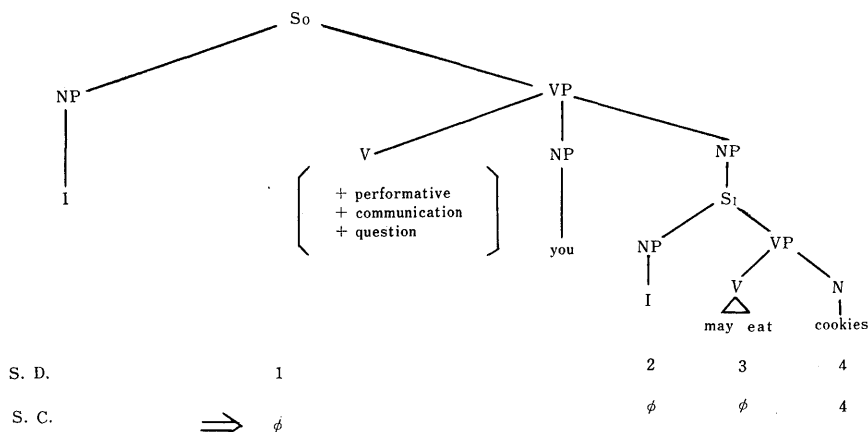
J. Ross⁷⁾ of M.I.T. gave a most convincing argument that every declarative sentence has a performative sentence with a first person subject and a second person indirect object in its deepest structure. I agree with J. McCawley⁸⁾ in assuming that 'question', 'imperative' and 'request' sentences are derived from performative sentences because the process of language acquisition seems to support this assumption.

Why is it that sentences like 'kore doku' are understood to have the same meaning as 'kore o dekete kudasai (or 'choodai')', because from the situational context we could tell that its conceptual structure is something like 'The speaker 'I' request the hearer 'you' that the hearer cause something to move' on the basis of our native linguistic intuition. In some situation we would use the following form:⁹⁾

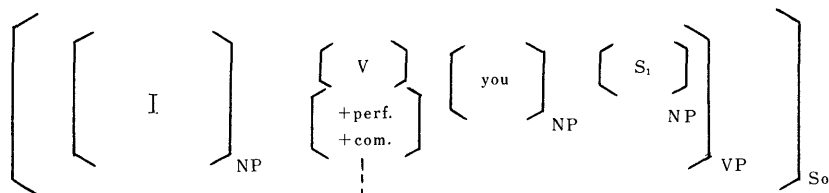
(20) Watakusi wa anata ni dokete kudasaru yoo onegai moosi te iru no desu. (=I am asking you to please remove it.)

It may be needless to say that the above sentence is close to the conceptual structure. Another indirect evidence of performative sentence is that at the beginning stage children use their own names instead of personal pronoun 'watasi' (I). The pronominalization of 'speaker' into 'I' is possible only when we assume the existence of a correferential noun in a higher sentence.

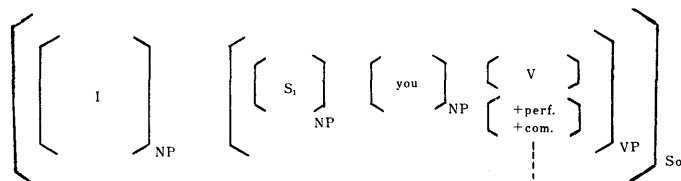
Now, we would claim that sentence(4) has the following conceptual structure and derivation:



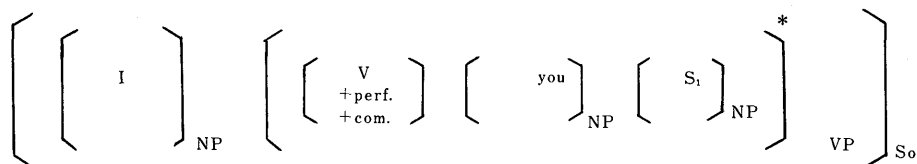
English performative sentence has the following general form:



while, Japanese one has the general form like the following:



But obviously, $[[V] [you]_{NP}[S]_{NP}]_{VP}$ in the two languages is in mirror image relationship. We, therefore, claim the following performative higher sentence to be a part of language universals:



The asterisk says that the category with * could be reversed. R. Langacker¹⁰⁾ claims:

“— the human child is innately equipped to expect this kind of regularity.”

What we would like to claim is that a child is born with the linguistic universal of performative sentence and that even one-or-two-word sentences are derived by applying reduction transformation to a rather complex conceptual structure.

Kellogg W. Hunt made an interesting observation:

“Having watched my own infants when they were angry and demanding, I feel certain that

infants speak imperatives long before they speak any words at all. I remember too that four-year-olds generate questions much faster than their parents want to generate answers."¹¹⁾

The first one-word sentences that my daughter learned when she was in the United States at the age of three were imperatives and questions:

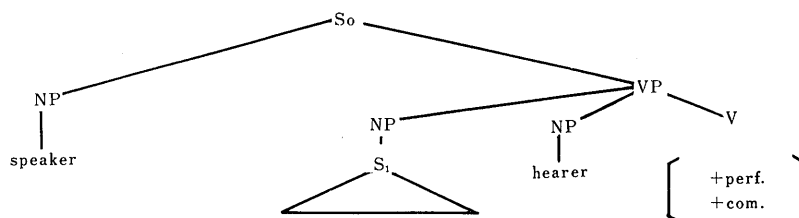
(21) Go outside? (May I go outside?)

(22) Move.

(23) Come here.

L. Bloom's 19 month old subject, Gia, produced imperative sentence like 'see window'.¹²⁾ Christina's one-word sentences contain questions as (3) and (4). Such evidences seem to support our assumption that all those bits of sentences are rather complex in their underlying structures and include performative sentences whose verbs contain such features as 'request', 'command', 'question' and others.

We propose that the first conceptual structure of a Japanese child's competence would look like the following:



Conclusion

We have argued that rules like (1) and (2) cannot make an adequate account of the underlying structures of a child's one-or-two-word sentences and that the cause of the inadequacy of the description is due to too much dependence on the distributional analysis of child's recorded utterances without paying enough attention to situational contexts of the utterances which provide child's actual semantic intent. Another cause of the inadequacy can be traced to the adoption of Chomsky's *Aspects*' model as theoretical framework. Studies of transformational development seems to have been concerned too much with the development of transformational operations. More attention should be paid to the structures of child's sentences which form his linguistic competence. This will in turn be expected to make substantial contributions to the exploration of general linguistic theory.

We have pointed out the complexity of the conceptual structures of a child's one-or-two-word sentences by the analysis of typical sentences such as (5) and (6). We have also claimed that as far as the development of child language is concerned the basic property of verbs is 'intransitivity' and 'transitivity' is introduced into the verbs by the imposition of some kind of 'causativity' and that, therefore, the former is cognitively simpler than the latter.

We have also claimed that performative higher sentence exists at the beginning

stage of child's linguistic development and that it is a part of innate linguistic universals. Performative verbs contain features like [+command, +request, +question etc.]. The kind of sentences such as 'imperative' and 'question' is determined by the selection of features of the performative verb.

It has been noted that deletion transformation is the type of transformation that is first used by children to make complex conceptual structure simple enough for immature psychological and neurophysiological apparatus to produce.¹³⁾ The incompleteness of child language may not be due to his lack of knowledge of linguistic rules but rather to his psychophysiological restrictions which prevent the application of necessary rules to the complex conceptual structures that are innate to child's linguistic competence.

Studies of linguistic competence have barely begun. The traditional psycholinguistic investigation of child language tends to be a mere description of linguistic performance or operations. Performance is only a guide to the unveiling of the existing linguistic competence. In this connection, the following words of Chomsky's¹⁴⁾ are most appropriate:

"The deeper question concerns the kinds of structures the person has succeeded in mastering and internalizing, whether or not he utilizes them, in practice, without interference from the many other factors that play a role in actual behavior. Obviously one can find out about competence only by studying performance, but this study must be carried out in devious and clever ways, if any serious result is to be obtained." (underline is mine)

It is said that a child is born with innate linguistic universals which provide him with mechanisms with which to respond to the language he is exposed to and which highly restrict the type of grammar he is to acquire. The performative higher sentence which we have discussed is presumably a part of such innate linguistic universals.

Notes

- 1) For an interesting discussion of the role of transformation, see T. Langendoen (1970)
- 2) Lois Bloom (1970), p.10.
- 3) Paula Menyuk was aware of the theoretical framework of performative analysis, but she did not incorporate in her studies of sentences children use. See P. Menyuk (1969), p.108 for her comment on performative analysis.
- 4) For an elaborate discussion of performative sentence analysis, refer to J. Ross (1970).
- 5) D. McNeill (1966).
- 6) Mr. Keichiro Okutsu (1967) maintains that 'ataru' is formed by adding '-ar-' (intransitivizer) to the stem 'ate-', but his analysis does not seem to reflect the process of language acquisition. I am indebted to Prof. Nobuyuki Honna, of Kinjogakuin University for reminding me of Okutsu's analysis.
- 7) J. Ross (1970)
- 8) J. McCawley (1968)
- 9) For some argument of performative sentences in Japanese, see my paper "A note on Higher Sentence" read before 62nd annual meeting of Linguistic Society of Japan (May 17, 1970, at Seijo University in Tokyo)
- 10) R. Langacker (1969)
- 11) Kellogg W. Hunt (1970)
- 12) L. Bloom, op. cit., pp.11-12.
- 13) P. Menyuk (op. cit. p.106) claims that addition transformation is the first type of transformation used by children but she does not seem to have given any convincing argument.
- 14) N. Chomsky (1964)

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