

A CONTRASTIVE STUDY OF NOMINAL CONSTRUCTIONS IN ENGLISH AND JAPANESE

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INTRODUCTION

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INTRODUCTION

As was pointed out by Fries, the contrastive study of a native language and the foreign language which is to be learned is very important in the

teaching of foreign languages. It is quite true that a scientific descriptive analysis of the language to be learned and a similar scientific descriptive analysis of the language of the learner, and a systematic comparison of these two descriptive analysis are required in order to build effective teaching materials.¹ This assumption was accepted by many people and especially by Lado. He set forth an elaborate method of comparison based on this assumption.² He says:

Certainly I believe that we are all one folk, that we are the same fundamentally. But because human personality has evolved a variety of ways to live, ways that we call cultures, we constantly misinterpret each other across cultures. If we ignore these cultural differences we will misjudge our cultural neighbors—as we constantly do at present—for a form of behavior that to them has one meaning may have another one to us.

If, on the other hand, we know that an item of behavior has a different meaning in the other culture we will not misunderstand. And we will have a chance to understand ourselves and what we do much better as a result.³

This is the very aim of English teaching. Using Lado's method of comparison, Kleinjans compared English and Japanese noun-head modification patterns and proved that the amount of interference that a Japanese student learning English noun modification patterns will encounter is a function of the differences between the two languages.⁴

Now, when we consider English teaching as the teaching of a human language, we must know what the human language is. There are many linguists who aim at describing grammar in which they emphasize the peculiarities of each language and consider their description to be the best. However, such linguists seem to reject studying on the level of human beings. That is to say, they seem to forget Lado's words cited above that "we are the same fundamentally". Although we have to distinguish similarities and differences between native and foreign languages, in order to do so, we need a common base to all languages

¹ Charles C. Fries, *American Linguistics and the Teaching of English* (Tokyo: Taishukan 1957) pp. 70-1.

² Robert Lado, *Linguistics Across Cultures* (Ann Arbor: Univ. Mich. Press, 1957).

³ *Ibid.*, p. 8.

⁴ E. Kleinjans, *A Descriptive-Comparative Study Predicting Interference for Japanese in Learning English Noun-Head Modification Patterns* (Tokyo: Taishukan, 1959).

which can cover them on the level of human beings. There is a linguistic theory which should fill this requirement. That is transformational generative grammar.

This study is based on the importance of the contrastive study which was emphasized by Fries and Lado and proved by Kleinjans, and the theory of transformational generative grammar which is now being developed by Chomsky and others.

When we consider the teaching method itself, we know it has some relationship to the study of the learning process. Therefore, studies in many fields such as psychology or physiology are required in order to find out the really effective teaching method for foreign languages. However, since there is no conclusive result of such investigation, we need to do very fundamental research in each field now, which this study tries in the field of linguistics.

More specifically the aim of this study is a precise description of nominal constructions in English and Japanese, contrasting them from a transformational grammar point of view. Teachers of foreign languages have often neglected to study their native language. However, we should emphasize here the necessity of clear knowledge about native language in teaching of foreign languages. Without grasping the structure of a native language explicitly, how can we understand the structure of foreign languages? As Lado says¹, the knowledge of native language is an indispensable condition. For example, consider the following mistake which is often made by Japanese students.

*He visited New York's uncle.

(*kaire wa Nyuuyooku no oxi o tazuneta*)

In order to avoid such a mistake, teachers should have a clear knowledge of the ambiguity of this Japanese construction.

Although much study has been done on English nominal constructions from the transformational point of view, only a little has been done for Japanese. For example the construction *N no N*, which is mentioned above, has been described so incompletely. We will emphasize this

¹ Lado, *op. cit.*, p. 2.

construction particularly in this study. Most of the nominal constructions in English and Japanese, except nominal compounds such as *stone wall*, *lemon drop*, or *kootunuseiri* (traffic control), *kootimenseki* (acreage under cultivation), will be discussed in this study. The study is organized in the following way.

Chapter I sketches the theory on which this study is based. Chapter II describes Japanese nominal constructions. Chapter III includes the descriptions of English nominal constructions and the contrastive survey between English and Japanese.

This is a contrastive study but our attention is mostly given to the clarification of each construction itself. Therefore, a detailed comparison should be done in the future. It will, however, be necessarily pointed out from the result of the clarified constructions which part is problematic in the comparison of English and Japanese.

CHAPTER I

PRELIMINARY REMARKS

1.1. Introduction

The actual appearance of the theory of generative grammar in the linguistic community was made through the publication of Noam Chomsky's *Syntactic Structures* in 1957.¹ However, looking for the real birth of the notion of grammatical transformation which plays a very important role in this theory, we find it in Zellig S. Harris's "Discourse Analysis" (1952).² This is a paper which aims at analyzing the extended discourse. This analysis tells not only the role of the element in the structure of its sentence, which descriptive linguistics used to do, but also "how a discourse can be constructed to meet various specifications." In order to do so, the notion of grammatical transformation was introduced as a way of the unified treatment. Chomsky developed this indispensable notion in grammar and began to formalize the theory of generative grammar.

¹ Noam Chomsky, *Syntactic Structures* (The Hague: Mouton & Co., 1957).

² Zellig S. Harris, "Discourse Analysis," *Language*, vol. XXVIII (1952). pp. 1-30.

Although this theory is very young, it is growing with considerable speed. However, it is also true that we are just at the beginning of this theory now, because the theory is to be revised so that it may meet the condition of descriptive and explanatory adequacy.

The sketch of this theory in this chapter is mostly based on Chomsky's *Aspects of the Theory of Syntax*¹, the most recent work on this theory. Of course many problems are left to be studied in the future, but the basic idea of this theory and what is known about it will be shown here.

1.2. The Aim of Linguistic Theory

Linguistics deals with human language. Chomsky restricts the term "linguistic theory" not to systems of terminology or methods of investigation (analytic procedures) but to systems of hypothesis concerning the general features of human language put forth in an attempt to account for a certain range of linguistic phenomena.² Then what are the general features of human language? In order to answer this question, it may be interesting to think about the language of other animals. Recently it came to be known that the communication system of animals is basically quite different from that of human beings. All the systems of the languages of animals consist of a finite number of signals, each of which is linked to a certain definite range of behavior. Of course, our non-verbal communication systems, shaking hands with another for example, are very similar to that of animals. However, our language, a verbal communication system, is not so simple as that of animals. The following three points are considered to be the important features of human language.

First, human language is innovative. When we say something, it is not only a repetition of what we have heard before. That is to say, there is not a finite number of patterns of which human language consists.

¹ Noam Chomsky, *Aspects of the Theory of Syntax*, (Cambridge: The M.I.T. press, 1965).

² Noam Chomsky, "Current Issues in Linguistic Theory", *The Structure of Language: Readings in the Philosophy of Language*, eds. J. A. Fordor and J. J. Fatz. (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1964), p. 50.

Children utter not only the sentences they have heard before but also those they have never heard. When they speak, they do not pick up some sentence from the inventory of sentences which they have as the result of their experience. It is the same with adults. This proves that human language is innovative.

Secondly, human language is free from the control of stimulation. The physical condition which surrounds us cannot determine our ability to use language at all. Feelings do not determine it, either. That is, not only a linguistic genius but all normal human beings can use language. The first and second points indicate the creative aspect of our ability in using language.

The third point is its appropriateness to situation. At this point, we can distinguish human language from the language produced by some automaton.

These peculiarities of human language were discussed by Descartes and the value of his remarks is appreciated by Chomsky now. Considering these features, we cannot define human language as a system of habits. Especially its creative aspect shows that it cannot be learned from the very beginning by analogy and generalization, but it emerges from the innate potentiality of human beings in certain antecedently arranged way under certain condition. According to this point of view, human language has some definite property as the reflection of human mind and thought. This property exists in the very deep level and it can be hypothesized as a set of *linguistic universals*.¹

Turning our attention to "linguistic theory" again, we find that it must be a hypothesis which is rightly concerned with linguistic universals and the generative process for constantly creating new sentence types.

¹ This can be classified as *substantive* universals or *formal* universals. The example of substantive universals, the traditional concern of general linguistic theory, are certain fixed universal phonetic features and syntactic categories (Noun, Verb, etc.) which have substantive characterizations independent of any language. On the other hand, an example of formal linguistic universals, the investigation of which has been begun quite recently, is the condition that the syntactic component of a grammar must contain transformational rules. These examples are only proposals, but linguistic theory must develop to make them clear.

Transformational generative grammar appears to serve this purpose.

The term “generative” is an appropriate translation for Humboldt’s term “erzeugen”, but it is sometimes misunderstood. That is to say, some people erroneously regard a generative grammar as a model for a speaker. They think that it describes how the speaker actually uses the knowledge of linguistic structure in producing and understanding sentences. However, it is no more true than are the rules of a mathematical system a description of the way in which proofs are written out or checked. In order to avoid this misunderstanding, we must distinguish two notions, *performance* and *competence*. Performance is the actual use of language in a concrete situation, and competence is the speaker-hearer’s knowledge of his language. What a generative grammar aims to describe is this ideal speaker-hearer’s intrinsic competence. So a generative grammar can be said to be a theory of linguistic competence.

1.3. The Organization of Transformational Generative Grammar

A generative grammar as a theory of linguistic competence must be a system of rules that can generate infinitely many sentences. In other words, it is a device that specifies the infinite set of well-formed sentences and assigns one or more structural descriptions to each of them. In this sense, this grammar is distinguished from the mere statements about the inventory of elements in structural descriptions and their contextual variants.

As a model which meets these requirements, transformational generative grammar contains three major components; the *syntactic*, *phonological*, and *semantic* components. The syntactic component has a recursive function in the generation of sentences and plays the central role in the grammar. That is, the latter two components, phonological and semantic components, are purely interpretive. The syntactic component specifies a deep structure and a surface structure for each sentence. A deep structure enters the semantic component and receives semantic interpretation. A surface structure, given by transformations on a deep structure, enters the phonological component and receives a phonetic

representation. The organization of the syntactic component which this study is mainly concerned with will be shown in the following section.

1.4. Syntactic Component

As is indicated above, the syntactic component gives all the information needed in an interpretation of a particular sentence. It consists of a *base* and a *transformational component*. The base generates deep structures which are relevant to semantic interpretation and the transformational component maps them into surface structures which are relevant to phonetic interpretation.

1.4.1. The base component consists of a *categorial subcomponent* and a *lexicon*. The categorial subcomponent, in turn, consists of a sequence of context free *rewriting rules*.

A rewriting rule has the following form:

$$(1) \quad A \longrightarrow B \quad / \quad X_Y$$

when X and Y are (possibly null) strings of symbols. This rule obeys the following restrictions:

1. *A* must be a single symbol. That is, a single symbol should be rewritten at a time.
2. It is not permitted to have the effect of a rearrangement (permutation) of elements.
3. *B* must be a nonnull string of symbols. That is, no deletion is permissible in this rule.

In short, rule (1) converts the string $\dots X A Y \dots$ to the string $\dots X B Y \dots$. When X or Y, or both are a nonnull string of symbols, this is a *context-sensitive* rewriting rule and when they are null, it is a *contextfree* rewriting rule. The categorial rules mentioned above are the latter case.

The vocabulary of symbols which are employed in this type of grammar includes *formatives* which can be subdivided into *lexical items* (*boy, like, etc.*) and *grammatical items* (*Perfect, Possessive, the, N, etc.*) and *category symbols* (S, NP, V, etc.) which can be further subdivided into *lexical category* and *major category*. The lexical category is substituted

for the dummy symbol Δ in the final stage of a categorial component and a major category is the one which dominates a string including a lexical category.

In rule (1), A is a single category symbol. When A is the first and Z is the last string in a sequence, the sequence of strings is *A-derivation of Z*, and each string of the sequence is derived from the one preceding it by the application of a rewriting rule. We say *A-derivation of Z is terminated* where Z is a string of formatives.

Part of the structural description of a terminal string Z will be a bracketing of Z into phrases categorized into particular types. We call this element of the structural description the *Phrase-marker* (P-marker) of Z . A P-marker can be represented as a labelled tree diagram.

In the categorial component, the rewriting rules apply to category symbols and finally introduce the strings that consist of grammatical formatives and dummy symbols. Such a string is called a *pre-terminal string*. The lexicon serves as the component which introduces lexical formatives into all the dummy symbols and makes a terminal string.

After all, the categorial component has the following two functions:

1. to define the system of grammatical relations
2. to determine the order of elements in deep structure

1 is important for semantic interpretation and 2 is for the functioning of transformational rules.

The lexicon consists of an unordered set of *lexical entries* and *syntactic redundancy rules*. Each lexical entry is a pair (D, C) , where D is a phonological distinctive feature matrix spelling a certain lexical formative and C is a set of features of various sorts. In short, the lexical entry specifies the following four points:¹

1. aspects of phonetic structure that are not predictable by general rule
2. properties relevant to the functioning of transformational rules
3. properties of the formatives relevant for semantic interpretation
4. lexical features indicating the position in which a lexical formative can be inserted.

¹ Chomsky, *Aspects of the Theory of Syntax*, p. 87.

Syntactic redundancy rules are *context-free subcategorization rules*¹ which introduce inherent features. They add and specify features wherever the general rule of a language predicts it.

In order to understand the discussion more easily consider the example shown below. This is a brief base component which generates a language “*sincerity may frighten the boy.*”²

A. Categorical Component (branching rules)

- (1) S \longrightarrow NP $\widehat{\text{Aux}}$ $\widehat{\text{VP}}$
- (2) VP \longrightarrow V $\widehat{\text{NP}}$
- (3) NP \longrightarrow (Det) $\widehat{\text{N}}$
- (4) Det \longrightarrow *the*
- (5) Aux \longrightarrow M
- (6) V \longrightarrow Δ
- (7) N \longrightarrow Δ
- (8) M \longrightarrow Δ

B. Preterminal String

N M V *the* N

C. Lexicon

a. Syntactic Redundancy Rules

- (1) [+N] \longrightarrow [\pm Common]
- (2) [+Common] \longrightarrow [\pm Count]
- (3) [+Count] \longrightarrow [\pm Animate]
- (4) [−Common] \longrightarrow [\pm Animate]
- (5) [+Animate] \longrightarrow [\pm Human]
- (6) [−Count] \longrightarrow [\pm Abstract]

b. Lexical Entries

(*sincerity*, [+N, −Count, +Abstract])

(*boy*, [+N, +Count, +Common, +Animate, +Human])

(*frighten*, [+V, +__NP, +[+Abstract] Aux __Det [+Animate])

(*may*, [+M])

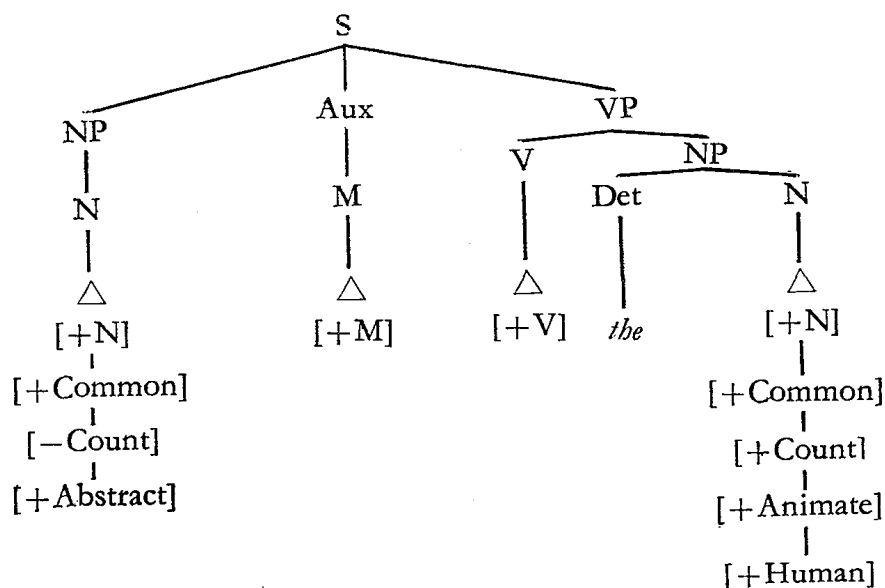
¹ We can distinguish *branching rules* from *subcategorization rules* among the rewriting rules of the base component. Branching rules are the rules of a categorical component, which analyze a category symbol into a string of one or more symbols each of which is either a terminal symbol of a non-terminal category symbol.

² *Ibid.*, p. 85.

What is lacking in the above example is the lexical rule which introduces each lexical item into derivation. The rule employed for this purpose is a kind of substitution transformation.¹ As was mentioned before, a lexical entry is of the form (D, C) , where D is a phonological matrix and C a complex symbol for a set of various features. In the example shown above, *sincerity* is a phonological matrix D , and $[+N, -Count, +Abstract]$ is a complex symbol C . This system of features C serves as the structure index I for a certain substitution transformation which substitutes (D, C) for a certain occurrence of Δ in the P-marker K if K meets condition I .² In case of the example “*sincerity may frighten the boy*”, the lexical item *frighten* is introduced in the following way. We add and specify features for the pre-terminal string $N \widehat{M} V \widehat{the} \widehat{N}$ by syntactic redundancy rules³ in the Lexicon and get the following string.

$[+N, -Count, +Abstract] \widehat{[+M]} \widehat{[+V]} \widehat{the} \widehat{[+N, +Count, +Animate, +Human]}$

The P-marker of this string is as follows:



¹ See pp. 12-3.

² This is a Boolean condition in terms of Analyzability in the usual sense of transformational grammar. See p. 55.

³ Not all the features are specified by syntactic redundancy rules. For example, a feature $[+N]$ is given by the node N .

Then the lexical rule which introduces *frighten* is

structure index: $\underbrace{[+Abstract]}_1 \text{ Aux } \underbrace{[+V]}_2 \text{ Det } \underbrace{[+Animate]}_3$

structural change: $1 \ 2 \ 3 \ \longrightarrow \ 1 \text{ } \textit{frighten} \ 3.$

In this case the P-marker meets the condition (structure index in the above rule) $[+V, +_NP, +[+Abstract]Aux_Det [+Animate]]$. In this way we can get the terminal strings as the output of the base component. In doing so, notice that the lexical entries constitute the full set of irregularities of the language.

We have seen so far the organization of the base component. Finally notice that this component bears the recursive function in allowing only one symbol $\#S\#$ recursive in rewriting rules and generates an infinite set of *generalized Phrase-markers*. There is a prediction about this component that much of its structure is common to all languages. This may be true and if it is proved, those aspects of the base structure which are not specific to a particular language can be stated only in general linguistic theory as part of the definition of the notion "human language". Anyway much investigation is needed to show the validity of this prediction.

As was mentioned before, the base of the syntactic component alone cannot characterize the full range of actual sentences. It only gives the Phrase-markers as the elementary content elements for semantic interpretation. Transformational rules construct the actual sentences from them.

1.4.2. The transformational subcomponent, which concerns itself in generating the surface structures, consists of a sequence of singular transformations. A transformational rule may be considered to be a rule of the form

(1) $X \longrightarrow Y.$

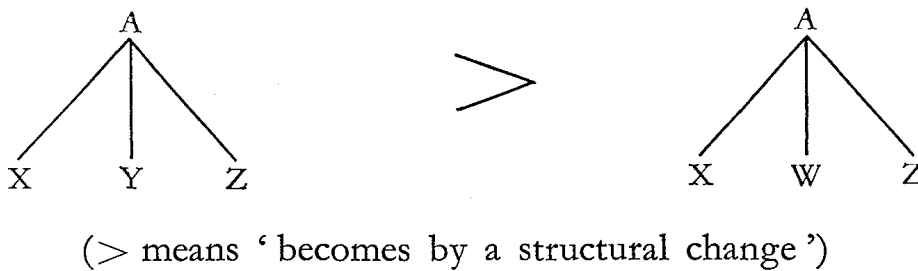
This seems very similar to categorial rules shown on p. 50. However, X and Y in this rule do not stand for simple strings of symbols but they stand for classes of P-markers. Although a symbol appearing in a categorial rule is to be used as a constant, a symbol appearing in this rule is

used as a variable. Each transformation must be defined by a *structure index*, a Boolean condition on Analizability, and a sequence of elementary transformations.¹ What we call elementary transformations are the following three operations: substitution, deletion, and adjunction. The first part of the transformational rule is a structure index which specifies the class of strings to which the rule applies. The second part of the rule specifies the *structural change* by means of numbers referring to the segments specified by the structure index. The operation of substitution, for example, can be described as follows:

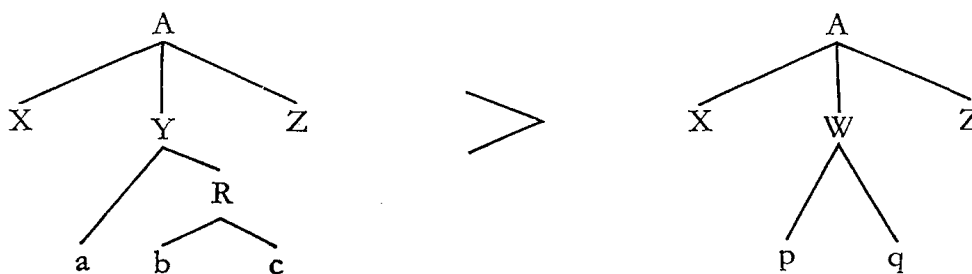
$$\text{structure index: } \begin{array}{ccc} \underline{X} & \underline{Y} & \underline{Z} \\ 1 & 2 & 3 \end{array}$$

$$\text{structural change: } 2 \longrightarrow W$$

When Y and W are terminal elements, the change in the P-markers is as follows:



If Y and W are non-terminal, the change is somewhat more complicated.



As for deletion transformation, the following convention is proposed in order to guarantee the unique recoverability.² That is to say, a deletion operation can eliminate

¹ Definition of *elementary transformation* is given in N. Chomsky, "Three Models for Description of Language", *Readings in Mathematical Psychology*, eds. R. D. Luce *et al.* (New York: John Wiley and Sons, Inc., 1965), Vol. II, p. 121.

² We have the general condition that only recoverable deletions are permitted.

1. a dummy element
2. a formative explicitly mentioned in the structure index (for example, *you* in imperatives)
3. The designated representative of a category (for example, indefinite Pronouns in the *wh*-question transformations)
4. an element that is otherwise represented in the sentence in a fixed position.¹

In connection with these points, let us consider the operation *erasure transformation* which plays a very important role in generating nominal constructions. The general principle for this operation is as follows:

A term X of the proper analysis can be used to erase a term Y of the proper analysis just in case the inherent part of the formative X is not distinct from the inherent part of the formative Y.²

That is to say, we substitute a term X of its proper analysis for a term Y of its proper analysis and then delete this new occurrence of X which replaced Y by this operation. As a result of this consideration, quantifiers which appear, for example, in Lees³ can be eliminated from the formulation of transformations.

We saw that the transformational component consists of a sequence of singular transformations. Then how are they ordered? They are now considered to be linearly ordered and perhaps only partially ordered. That is to say, they have some intrinsic order but there is no reason to have extrinsic order. Intrinsic order and extrinsic order are distinguished as follows. If rule R₁ introduces the symbol A and R₂ analyzes A, there is an intrinsic order relating R₁ and R₂, but not necessarily any extrinsic order. Then, when a transformation T₁ applies to a structure which is the result of the application of T₂, there is an intrinsic order between T₁ and T₂. However, we should notice one thing about the ordering of transformation. Remember that categorial rules allow recursive #S# as the recursive function of the base component and

¹ Chomsky, *Aspects of the Theory of Syntax*, p. 144.

² *Ibid.*, p. 182.

³ R. B. Lees, *The Grammar of English Nominalizations* (The Hague: Mouton & Co., 1964).

generate *generalized Phrase-markers*. The application of transformations to generalized Phrase-markers is a problem. A linear sequence of singular transformations applies to them cyclically in the following way. First of all, the sequence of transformational rules applies to the most deeply embedded base Phrase-marker. Next, the sequence of rules reappplies to a string dominated by $\#S\#$ in which the first base Phrase-marker is embedded. We repeat this operation until finally the sequence of rules applies to the string dominated by the initial symbol S of the entire generalized Phrase-marker. That is to say, given a generalized Phrase-marker, we apply the sequence of transformational rules sequentially from the bottom up—apply the sequence of rules to a given string only if we have already applied it to all base Phrase-markers embedded in this string.

We should make the notion “deep structure” clear here. Some strings generated by base rules are blocked by transformations. Notice that the recursive S is put between the boundary symbol $\#$. This is because we can establish the convention that a well-formed surface structure cannot contain internal occurrence of $\#$. Consider the following two examples.

(1) Look at the man ($\#$ the man is standing by the gate $\#$)

(2) Look at the man ($\#$ the boy is standing by the gate $\#$)

The first string can be relativized, replacing “the man” by “who”, because the identity of the two Nouns meets the condition of erasure transformation. However, in the case of (2), the erasure transformation cannot apply. Accordingly the second example is blocked by the transformation, although it is generated by the base rules. The boundary symbol $\#$ shows this blocking because it is left in a surface structure not deleted by transformation and it shows this string is not well-formed. The basic notion “deep structure” can be defined as follows:

deep structure M_D underlies well-formed surface structure M_S .¹ That is to say, example (2) is not “a deep structure” because the transformational rule acts as a “filter” and we cannot generate a well-formed

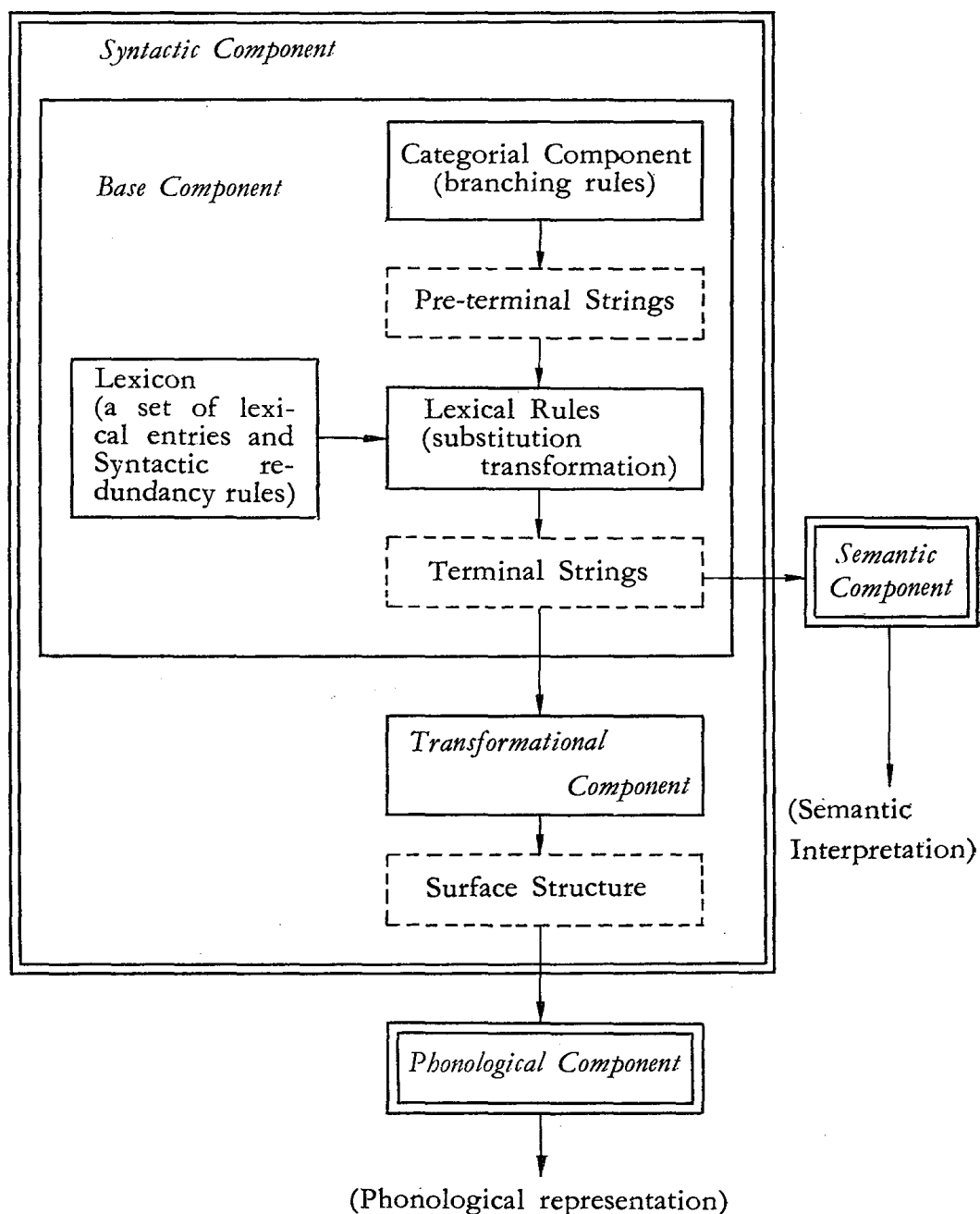
¹ Chomsky, *Aspects of the Theory of Syntax*, p. 138.

surface structure from this. This is a very important function of the transformational component.

1.5. Summary

To summarize our discussion, a diagram of the components of transformational generative grammar is given below.

The Components of Transformational Generative Grammar



CHAPTER II

JAPANESE NOMINAL CONSTRUCTIONS

2.1. Japanese Categorical Rules

Before we discuss each nominal construction, categorial rules should be presented in order to show how the system of Japanese grammatical relations are defined. This sketch of categorial rules is modeled after Kazuko Inoue's base rules.¹ They are presented with brief comment and explanation of special symbols.

(1) #Sentence# \longrightarrow (DS)S(Del)(Mod)

As *DS*, *Del*, *Mod* are not our special concern here, we shall not rewrite them any further, and only brief explanation will be given. *DS* stands for *Sentence Adverbs* such as *osoraku* (perhaps), *hai* (yes), *zituwa* (in fact) etc. It also contains subordinate clauses such as *issyookenmei benkyoo sitakeredo* (though I studied hard), *ittan kimeta karaniwa* (once you have made up your mind), etc.² *Del* stands for *Delimiter* which contains *sae* (only), *sura* (even), *kurai* (at least) and the like. *Mod* is *Modal* which contains presumptive *daroo*, *Question (D)Q*³, imperative *ro*, interjections *wa*, *yo*, tag-question morpheme *ne*, emphatic *ze*, *zo*, and the like.

(2) S \longrightarrow Snuc (Wa(Red)) (Nag)T

Wa makes logical subject, attached to a constituent NP or V. When we choose *wa*, the following sentences can be generated, for example⁴:

Nyuuuyooku ni wa takai tatemono ga takusan aru

(In New York there are many high buildings)

issyookenmei hasiri wa sita

((Someone) ran hard, but . . .)

¹ Kazuko Inoue, "Base Rules for Japanese (Tentative)", Dec. 7, 1966, (Mimeographed.)

² K. Inoue introduced concatenator as a member of *DS* in order to make a coordinated string, but as for coordinated structures many problems are left to be solved.

³ See p. 76. *D* means a morpheme to make a question word *dare* (who), *dore* (which), etc.

⁴ As for *Wa* attachment transformation, see Shigeyuki Kuroda, "Generative Grammatical Studies in the Japanese Language" (unpublished Ph.D. dissertation, M.I.T., 1965).

Red is a reducer which reduces *V* into *da* in the constituents which have *wa*. For example, such sentences as *gakkoo de wa seito o osieru* (At school they teach pupils), *nezumi wa inu ga oikakeru* (As for rats, dogs run after them.) are transformed into *gakkoo de wa seito da*, *nezumi wa inu da*, respectively. In this way, we can make the so-called construction of argument. *Neg* is a negative morpheme *ana*.

$$(3) \quad T \longrightarrow \begin{Bmatrix} U \\ Ta \end{Bmatrix}$$

Tense is developed into present *U* and past (or perfect) *Ta*.

$$(4) \quad \text{Snue} \longrightarrow (\text{Time}) (\text{Place}) \text{Pred Phrase}$$

Before *Time* and *Place* we can have *Concession*; *dare ga yatteru* (Whoever may try) and *Condition*; *watasi ga hanaseba* (if I speak) but they do not have relevant relations with nominal constructions. Therefore, they are not stated in this rule.

$$(5) \quad \text{Time} \longrightarrow \begin{Bmatrix} \#S\# \\ \left. \begin{array}{l} \text{te (kara)} \\ \text{nagara} \\ \text{tutu} \\ \text{sidai} \end{array} \right\} \\ NP \end{Bmatrix}$$

Notice that here appears the recursive *S*. If *S* is developed into *hon o yomu* (read a book), for example, *hon o yomi nagara* (reading a book) serves as *Time*. This is an example of sentence embedding transformation, and as a result the boundary symbols *#* are deleted. Notice also that no particle is described after *NP*. The reason that there is no particle with *NP* is that it is given at the final stage of grammar by such a rule as follows:

After *NP* dominated directly by *Time*, add *ni*.

This kind of rule gives just phones like *ni*. All the *NPs* in categorial rules will be treated in this way.

$$(6) \quad \text{Place} \longrightarrow NP$$

de is attached to this *NP*.

$$(7) \quad \text{Pred Phrase} \longrightarrow NP (\text{Dd}) (\text{AD}) (\text{Comp}) VP$$

This *NP* is the so called syntactic subject and *ga* is attached to it.

$$(8) \quad Dd \longrightarrow \left\{ \begin{array}{l} \#S\# \text{ hodo} \\ Ddx \end{array} \right\}$$

Degree adverb *Dd* is developed into *#S# hodo*; *nakitaku naru hodo* (so much so that one wants to cry), and miscellaneous degree adverbs *Ddx*.

$$(9) \quad AD \longrightarrow (\text{Reason } \text{or} \text{ Purpose } \text{or} \text{ Frequency } \text{or} \text{ Duration } \text{or} \\ \text{Means } \text{or} \text{ Concomitative } \text{or} \text{ Manner } \text{or} \text{ Source } \text{or} \text{ Extent } \text{or} \text{ Direction})$$

The symbol (or) means that we must choose at least one symbol from among those enclosed by or.

$$(10) \quad \text{Comp} \longrightarrow \text{NP}$$

In this case, particles *ni*, *to*, and *kara* are attached to *NP*. It is defined by the feature of verbs which particle of the three should be chosen. For example, *ubau* (take away) requires *kara* (from) and *arason* (fight), *to* (with).

$$(11) \quad \text{VP} \longrightarrow \left\{ \begin{array}{l} \text{Predicate } aR \\ ((NP) (NP) (\#S\#) V (Asp)) \end{array} \right\}$$

We have two *NPs* in this rule. The first *NP* which is far from *V* requires *ni* and the second one requires *o*. The latter is a so-called object. *Asp* stands for "aspect" which contains durative *teiru* and terminate *tesimau*.

$$(12) \quad \text{Predicate} \longrightarrow \left\{ \begin{array}{l} \text{Adj} \\ \text{AN} \\ \text{NP} \end{array} \right\}$$

Rules (11) and (12) generate such strings as *utukusi ku aru* (be beautiful) *sizuka de aru* (be quiet) *sensei de aru* (be a teacher) etc. *ku*, *de* are attached to *Predicate* automatically before *aR*, according to the kind of *Predicate*. When we choose *Wa Red* in rule (2), these strings are transformed into *utukusi i*¹, *sizuka da*, *sensei da*, respectively. *Wa Red* is considered to be chosen very often with *Predicate aR*, because *sizuka da* is felt more natural than *sizuka de aru*.²

¹ *Adi* plus *Red* is changed into *Adi* plus *i* by a morphological rule.

² We know many examples which contains not *Wa* but *ga* and *da*. For example, *oba ga sensei da* (My aunt is a teacher), *syosai ga sizuka da* (It is quiet in the study.) In these sentences *ga* has some emphatic function. This is to say, they have such meanings as "The one who is a teacher is my aunt", or "The place where it is quiet is the study." So we consider this *ga* as a intensifier in reduced constructions.

$$(13) \text{ NP} \longrightarrow (\text{Det}) (\#S\#) \left\{ \begin{array}{l} ((\Delta)\text{N} ((\text{Dd}) \text{Nq}) (\text{Rel} (\text{Dd}) \text{Nr})) \\ \text{Nom} \end{array} \right\}$$

Rel stands for relational particle. *Nr* is a relational noun. *Det* stands for determiner, *Nom* for nominalizer, and *Nq* for quantity noun. The dummy symbol Δ will be discussed in the next section.

$$(14) \text{ Det} \longrightarrow \left\{ \begin{array}{l} \text{KSA} \\ \text{Detx} \end{array} \right\}$$

KSA represents *kono*, *sono*, *ano*.

$$(15) \text{ Nom} \longrightarrow \left\{ \begin{array}{l} \text{koto} \\ \text{Question} \end{array} \right\}$$

$$(16) \text{ Reason} \longrightarrow \left\{ \begin{array}{l} \text{Reason 1} \\ \text{Reason 2} \end{array} \right\}$$

$$(17) \text{ Reason 1} \longrightarrow \#S\# (\Delta)$$

This rule generates, for example, *byooki o sita no de* (because one was ill) or *byooki de* (because of illness). The latter example is the result of the choice of Δ .

$$(18) \text{ Reason 2} \longrightarrow \#S\# (\Delta)$$

tameni is attached to this $\#S\# (\Delta)$ afterwards, and we get *byooki o sita tame ni* (because one was ill) or *byooki no tame ni* (because of illness).

$$(19) \text{ Purpose} \longrightarrow \left\{ \begin{array}{l} \text{Purpose 1} \\ \text{Purpose 2} \end{array} \right\}$$

$$(20) \text{ Purpose 1} \longrightarrow \#S\# (\Delta)$$

ni is attached to this $\#S\# (\Delta)$ afterward, and *sigoto o si ni* (in order to do one's job) or *sigoto ni* (for one's job) and the like are generated.

$$(21) \text{ Purpose 2} \longrightarrow \#S\# (\Delta)$$

Some strings like *kekkon o suru tame ni* (in order to marry) or *kekkon no tame ni* (for one's marriage) are generated by this rule.

$$(22) \text{ Duration} \longrightarrow \text{NP}$$

no aida is attached to this *NP*¹.

$$(23) \text{ Means} \longrightarrow \text{NP}$$

de is attached to this *NP* and we get, for example, *enpitu de (kaku)* (to write with a pencil).

¹ We have some *Ns* which do not take *no aida*, for example *itinenkan* (for a year) *issyuuukan* (for a week). These lexical items have a feature [$-$ Particle] in the lexicon.

(24) Concomitative \longrightarrow NP

This NP requires *to* as in the following example; *tomodati to (eiga o miru)* (to see a movie) with a friend).

(25) Manner \longrightarrow $\left\{ \begin{array}{l} \text{Man} \\ \text{Adj} \\ \text{AN} \end{array} \right\}$

Adj and *AN* dominated by *Manner* require *ku* and *ni* respectively.

(26) Source \longrightarrow NP

kara is attached to this NP as in *Tokyo kara (Hokkaido e iku)* ((to go to Hokkaido) from Tokyo).

(27) Extent \longrightarrow NP

This NP requires *made*. For example, *ano sima made (oyogu)* ((to swim) to that islet).

(28) Direction \longrightarrow NP

e is attached to this NP as in *kita e susumu* (to go north).

(29) Nq \longrightarrow $\left\{ \begin{array}{l} \text{Nn} \widehat{\text{Clf}} \\ \text{Nqx} \end{array} \right\}$

Nn stands for numeral noun, *Clf* for classifier, and *Nqx* for quantity noun other than *Nn*.

(30) Ddx \longrightarrow Δ

Hereafter all the rules change category symbols into the dummy symbol Δ . This dummy symbol is substituted for each lexical item by lexical rules (substitution transformation). For example, the dummy symbol dominated by *Ddx* is substituted for (*tatta* [+Degree, +Numeral, +Verbal, . . .]), (*taihen* [+Degree, -Numeral, +Verbal, . . .]) etc.

Some lexical items are given after each rewriting rule.

(31) Adj \longrightarrow Δ

(*akaK*¹ [+Adjective, +color, . . .]) (red)

(*nagaK* [+Adjective, +quantity, . . .]) (long)

(*masuK* [+Adjective, +taste, . . .]) (poor)

¹ The capital letters in these examples shows that they change morphologically according to the following elements.

- (32) AN \longrightarrow Δ
(sizuka [+Adjectival noun, -noise, . . .]) (quiet)
(kenkoo [+Adjectival noun, +animate, . . .]) (healthy)
(sinpoteki [+Adjectival noun, +idea, . . .]) (progressive)
- (33) V \longrightarrow Δ
(aruK [+Verb, +__, +[+Animate]__, . . .]) (walk)
(nier [+Verb, +__, +non-volitional, . . .]) (be cooked)
(sinzir [+Verb, + #S# __, +[+human]__, . . .]) (believe)
- (34) N \longrightarrow Δ
(niwa [+Noun, \pm Det __, -Animate, . . .]) (garden)
(otooto [+Noun, \pm Det __, +Human, . . .]) (brother)
(meate [+Noun, \pm Det __, -Quant, . . .]) (aim)
- (35) Nn \longrightarrow Δ
(iti [+Noun, +Numeral, . . .]) (one)
(buta [+Noun, +Numeral, . . .]) (two)
(hyaku [+Noun, +Numeral, . . .]) (hundred)
- (36) Clf \longrightarrow Δ
(tu [+Classifier, +Nn __, +Inanimate, . . .])
(nin [+Classifier, +Nn __, +Human, . . .])
(hiki [+Classifier, +Nn __, +Animate, -Human, . . .])
- (37) Nqx \longrightarrow Δ
(oozei [+Noun, +Quantity, -Numeral, +Human, . . .])
 (a large number of people)
(syoosyoo [+Noun, +Quantity, -Numeral, . . .]) (few)
(takusan [+Noun, +Quantity, -Numeral, . . .]) (much)
- (38) Nr \longrightarrow Δ
(ato [+Noun, +Relational, +Time, +Place, . . .])
 (back)
(ue [+Noun, +Relational, +Place, . . .]) (a place
 above)
(minami [+Noun, +Relational, +Place, . . .]) (south)
- (39) Man \longrightarrow Δ
(noronoro [+Adverb, +Manner, -Speed, . . .]) (slowly)
(gatugatu [+Adverb, +Manner, +eating, . . .]) (greedingly)

- (40) Rel \longrightarrow Δ
 (*dotabata* [+Adverb, +Manner, +Noise, . . .]) (noisily)
 (*no* [+Relation Marker, +__Nr, . . .])
 (*kara* [+Relation Marker, +__Nr, +Source, . . .])
 (*yori* [+Relation Marker, +__Nr, +Comparison, . . .])
- (41) Frequency \longrightarrow Δ
 (*sibasiba* [+Adverb, +Frequency, . . .]) (often)
 (*tamani* [+Adverb, +Frequency, . . .]) (seldom)
 (*tokidoki* [+Adverb, +Frequency, . . .]) (sometimes)
- (42) Detx \longrightarrow Δ
 (*aru* [+Determiner, -definite, . . .]) (a certain)
 (*iwayuru* [+Determiner, . . .]) (so-called)
 (*kano* [+Determiner, +definite, . . .]) (that)

2.2. Nominal Constructions

In the preceding section we have seen briefly how Japanese grammatical relations are described. Now let us discuss our theme, Nominal Construction. What we call nominal constructions are those which are dominated by the category symbol *NP* in the categorial rules shown above. *NP* is introduced by rules 5, 6, 7, 10, 11, 12, 22, 23, 24, 26, 27, and 28. Whatever node may introduce *NP* according to these rules, its construction is defined by rule 13. That is to say, rule 13 generates all the base structures of nominal construction. Although the obligatory element of *NP* is *N* or *Nom*, we have the following constructions as nominals according to the optional elements chosen with *N* or *Nom*. We can group them as follows:

- 1) *N* with optional elements except *Det* and #*S*#
 - i *N*, ii *N+Nq*, iii *N+Dd+Nq*, iv *N+Rel+Nr*,
 - v *N+Rel+Dd+Nr*, vi *N+Nq+Rel+Nr*, vii *N+Dd+Nq*
 - +*Rel+Nr*, viii *N+Dd+Nq+Rel+Dd+Nr*
- 2) *N* with optional elements except #*S*#
- 3) *N* with #*S*#
- 4) *Nom* with #*S*# (*Nom* requires #*S*# as an obligatory element.)
- 5) *N* substituted for no lexical item plus #*S*#

6) N with Δ and $\#S\#$

Some examples of these groups will be shown in numerical order.
Comment or explanation will be given wherever it is needed.

2.2.1. In this section examples of group 1) are presented.

- i. N *hana* (flower), *tori* (bird), *kodomo* (child)
- ii. $N+Nq$
hon sansatu (three books)
inu nihiki (two dogs)
musume hitori (one daughter)
- iii. $N+Dd+Nq$
tukue tatta hitotu (only one desk)
usi tyoodo yontoo (just four cows)
syain wazuka hatinin (only eight staff members)
- iv. $N+Rel+Nr$
kawa no mukoo (a place across the river)
uma no soba (a place beside the horse)
syoojo no migi (the right side of the girl)
- v. $N+Rel+Dd+Nr$
tokoya no kanari saki (a place considerably beyond the barber's)
mura no tyotto kita (a place a little north of the village)
- vi. $N+Nq+Rel+Nr$
pan nimai no ue (a place on the two slices of bread)
gakusei hutari no hoka (others except two students)
- vii. $N+Dd+Nq+Rel+Nr$
seito tatta gonin no aida (space among only five pupils)
hantaisya kanari tasuu no mae (a place before considerably many objectors)
- viii. $N+Dd+Nq+Rel+Dd+Nr$
sumire honno sukosi no unto soba (a place very near to the so few violets)
matu tatta ippon no zutto sita (a place far beneath the only one pine tree)

2.2.2. Some examples of group 2) will be shown here.

i. *Det+N*

- kono hana* (this flower)
- sono tori* (the bird)
- ano kodomo* (the child)
- taisita zinbutu* (a great person)

ii. *Det+N+Nq*

- kono hon sansatu* (these three books)
- sono inu nibiki* (the two dogs)
- ano musume hitori* (that one daughter)
- kano toosyo nituu* (those two contributions)

This construction is ambiguous because these examples can be interpreted as “three these books” and the like. That is to say, *Det* can be taken as a modifier of *N* alone or *N+Nq*.

iii. *Det+N+Dd+Nq*

- kono tukue tatta hitotu* (this only one desk)
- sono usi tyoodo yontoo* (the just four cows)
- ano syain wazuka hatinin* (only those eight staff members)
- waga ko tatta hitori* (my only one child)

iv. *Det+N+Rel+Nr*

- kono kawa no mukoo* (the place across this river)
- sono uma no soba* (the place beside the horse)
- ano syoojo no migi* (the right side of that girl)
- toaru ie no mae* (a place before a certain house)

In this case, notice that *Det* modifies *N* only, although the head of this construction is *Nr*. This is a feature of *Nr* which is described in the lexicon. We must notice this fact for all the constructions which have *Nr*.

v. *Det+N+Rel+Dd+Nr*

- kono tokoya no kanari saki* (a place considerable beyond this barber's)
- ano mura no tyotto kita* (a place a little north of that village)

vi. *Det+Nq+Rel+Nr*

- kono pan nimai no ue* (a place on these two slices of bread)

sono gakusei hutari no hoka (others except the two students)

vii. *Det+Dd+Nq+Rel+Nr*

kono seito tatta gonin no aida (space among these only five pupils)

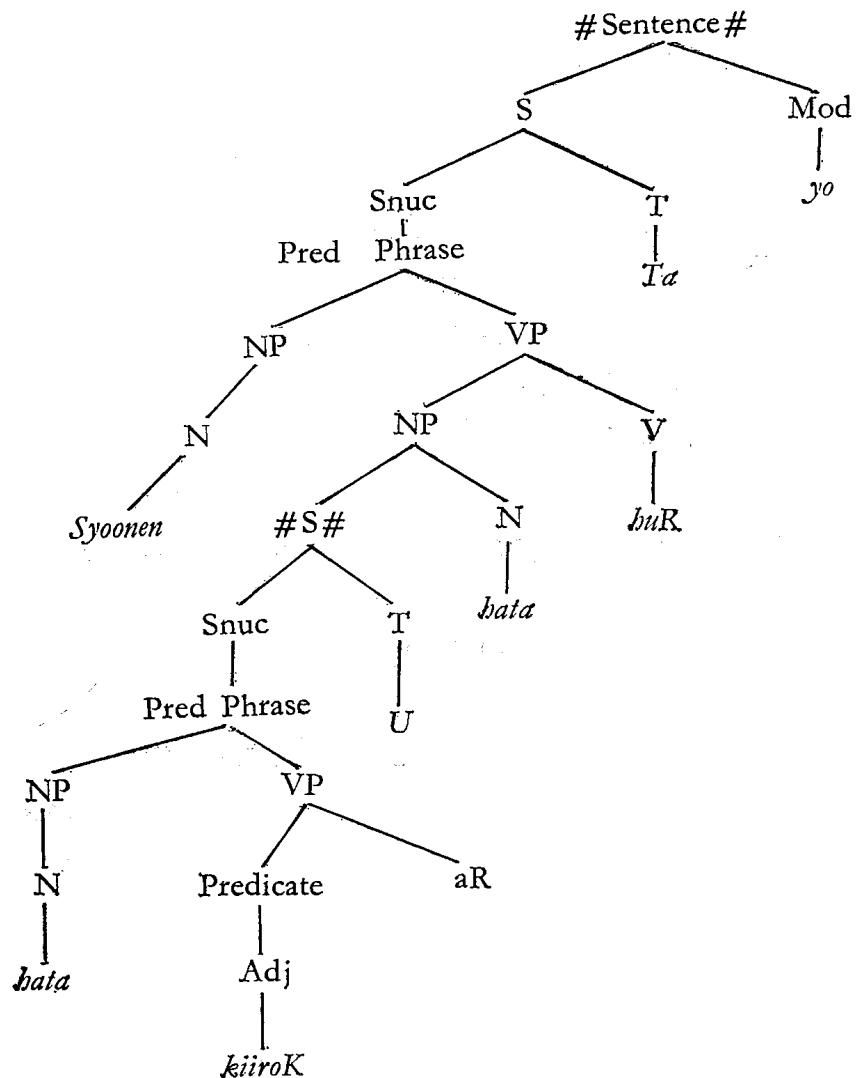
ano bantaisya kanari tasuu no mae (a place before those considerably many objectors)

viii. *Det+N+Dd+Nq+Rel+Dd+Nr*

kono sumire honno sukosi no unto soba (a place very near to these so few violets)

sono matu tatta ippon no zutto sita (a place far beneath the only one pine tree)

Fig. 1



2.2.3. In this section we will discuss the examples which belong to group 3). All the constructions whose examples are shown above are generated chiefly by categorial and lexical rules, and no special transformational rules are needed. However, shown hereafter need some transformational rules.

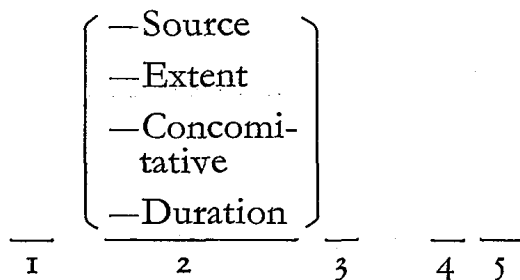
In the case of #S#, we have many constituent structures according to the kind of VP in #S#. See the categorial rules 11 and 12 (p. 61).

If we develop VP as $\widehat{Predicate}aR$, we have three types of constituent structures according to how we develop *Predicate*. That is to say, we have $Adj+aR$, $AN+aR$, and $NP+aR$. Now let us consider the case when we choose $Adj+aR$. The P-marker shown on P. 68 as Fig. 1, for example, can be a deep structure of a sentence “*syoonen ga kiiroi bata o butta yo*” (A boy waved a yellow flag.)

In order to map this deep structure to a surface structure, we need some transformational rules, and the following rule is the most important for the nominal construction “*kiiroi bata*”.

T. 1. *Relativization Erasure Transformation*

structure index: $[\# [X \quad N \quad Y]_S \# \quad N \quad W]_{NP}$

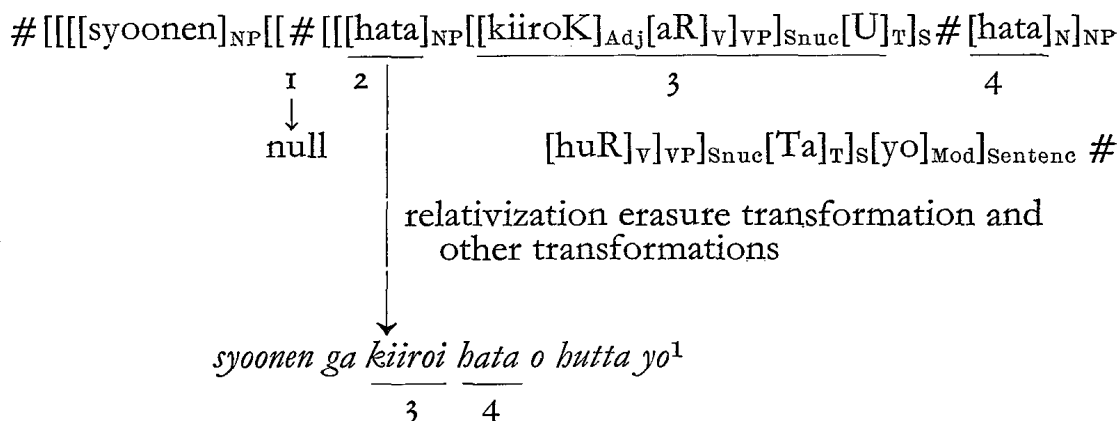


structural change: 2 is erased by 4

As was mentioned in Chapter I, there is a universal condition on erasure transformations which need not be described in every structure index. That is to say, the term and the other one which is used to erase it must be identical. When this transformation can be applied, the boundary symbol # is deleted automatically. If not, it is left in a string, which shows that the string is not a deep structure because it is not underlying a well-formed surface structure. This is the filtering power of

the transformational component.

The following illustration may be suitable for the explanation of this example.



When we choose $\#S\#$ and N , this transformational rule is required. All of the following examples are the result of the application of the same transformation. They are listed with constituent structures.

$Dd + Adj + aR + T + N$

totemo takai yama (a very high mountain)

$[\# [yama \text{ ga } \text{totemo } \text{takaK } aR \ U]_S \# [yama]_N]_{NP}$

$AD + Adj + aR + T + N^2$

Tokyo kara tooi mati (a city far from Tokyo)

$[\# [mati \text{ ga } \text{Tokyo } \text{kara } \text{tooK } aR \ U]_S \# [mati]_N]_{NP}$

$Comp + Adj + aR + T + N$

suuzi ni yowai seito (a pupil weak in figures)

$[\# [seito \text{ ga } \text{suuzi } \text{ni } \text{yowaK } aR \ U]_S \# [seito]_N]_{NP}$

$Time + Adj + aR + T + N$

kinoo samukatta heya (a room where it was cold yesterday)

$[\# [kinoo \text{ heya } \text{ga } \text{samuK } aR \ \text{Ta}]_S \# [heya]_N]_{NP}$

¹ As was shown in 2.1., particles are added at the end of the generation. In order to make the example easy to understand, all the necessary particles are added here. In fact, we get “*kiiroK aR U bata*” from the underlying structure of this example, but as was indicated before, *aR* takes $\widehat{Wa} \text{ Red}$ very often, I present “*kiiroi bata*”, which is a result of taking $\widehat{Wa} \text{ Red}$.

² Of course we have such examples that have some kind of *ADs* together or that have *Dd*, *AD*, *Time*, *Place*, etc., at the same time. However, such examples are not illustrated here.

Place+*Adj*+*aR*+*T*+*N*

itiba de yasui niku (meat cheap at the market)

[#[*itiba de niku ga yasuiK aR U*]_S#[*niku*]_N]_{NP}

AN+*aR*+*T*+*N*

*nigiyaka na mati*¹ (a busy town)

[#[*mati ga nigiyaka de aR U*]_S#[*mati*]_N]_{NP}

N+*aR*+*T*+*N*

*kinu no yoohuku*² (a silk dress)

[#[*yoohuku ga kinu de aR U*]_S#[*yoohuku*]_N]_{NP}

When we choose $(NP)(NP)(\#S\#)V(Asp)$ as VP , we have, for example, some constituent structures as follows. Of course there are so many types of constituent structure, but only a few of them will be shown.

V+*T*+*N*

naku tori (a bird which sings)

[#[*tori ga naK U*]_S#[*tori*]_N]_{NP}

NP+*V*+*T*+*N*

tegami o kaita pen (a pen with which someone wrote a letter)

[#[*pen de tegami o kaK Ta*]_S#[*pen*]_N]_{NP}

NP+*V*+*T*+*N*

kodomo ni katta hon (a book which someone bought for a child)

[#[*kodomo ni hon o kaW Ta*]_S#[*hon*]_N]_{NP}

$\#S\#+V+T+N$

roozin o yakkaimono to omou wakamonotati (young men who think an old man a nuisance)

[#[*wakamonotati ga roozin o yakkaimono to omoW U*]_S#[
[*wakamonotati*]_N]_{NP}

V+*Asp*+*T*+*N*

¹ This example is also the result of the choice of $Wa\widehat{Red}$. When we do not take $Wa\widehat{Red}$, we get “*nigiyaka de aru mati*”.

² In this case, “*kinu de aru yoohuku*” is derived from the underlying structure in fact. This example is a result of the choice of $Wa\widehat{Red}$, too.

³ In this case, “*roozin o yakkaimono to*” is derived from the sentence “*roozin ga yakkaimono de aru*” by *Quotation Transformation*.

me teacher)

[#[syoonen ga watasi o sensei to yoB U]_S#[syoonen]_N
[wazuka]_{Dd}[rokunin]_{Nd}]_{NP}

#S# + N + Rel + Nr

Remember that #S# modifies not Nr but N in this construction.¹ This fact is formalized in *Relativization Erasure Transformation*. That is to say, the construction which contains Nr cannot be relativized. See the following examples:

Adj + aR + T + N + Rel + Nr

siroi mon no mae (a place before the white gate)

[#[mon ga siroK aR U]_S#[mon]_N[no]_{Rel}[mae]_{Nr}]_{NP}

NP + V + T + N + Rel + Nr

zyunsa ni tazuneta ie no soba (a place near the house about which someone asked a policeman)

[#[zyunsa ni ie o tazuneR Ta]_S#[ie]_N[no]_{Rel}[soba]_{Nr}]_{NP}

#S# + N + Rel + Dd + Nr

AN + aR + T + N + Rel + Dd + Nr

sizuka na mati kara zutto kita (a far northern place from the quiet town)

[#[mati ga sizuka de aR U]_S#[mati]_N[kara]_{Rel}[zutto]_{Dd}
[kita]_{Nr}]_{NP}

NP + V + T + N + Rel + Dd + Nr

ziko o mita tooge yori tyotto sita (a place a little down the mountain pass where someone saw the accident)

[#[tooge de ziko o mir Ta]_S#[tooge]_N[yori]_{Rel}[tyotto]_{Dd}
[sita]_{Nr}]_{NP}

#S# + N + Nq + Rel + Nr

Adj + aR + T + N + Nq + Rel + Nr

¹ As we have such somewhat doubtful expressions as “*kurai ana no naka* (a place in a dark hole, or a dark place in a hole)”, or “*sizukana kooen no ura* (a place at the back of the quiet park, or a quiet place at the back of the park)”, some problems are left to be solved. However, these expressions are tentatively considered to be derived from the following constructions:

[#[ana ga kuraK aR U]_S#[ana]_N[no]_{Rel}[naka]_{Nr}]_{NP}

[#[kooen ga sizuka de aR U]_S#[kooen]_N[no]_{Rel}[ura]_{Nr}]_{NP}

atui hon sansatu no sita (a place under the three thick books)

[#[hon ga atuK aR U]_S#[hon]_N[sansatu]_{Nq}[no]_{Rel}[sita]_{Nr}]_{NP}
V+T+N+Nq+Rel+Nr

nokotta kodomo yonin no hoka (others except four children who remained)

[#[kodomo ga nokoR Ta]_S#[kodomo]_N[yonin]_{Nq}[no]_{Rel}
[hoka]_{Nr}]_{NP}

#S# + N + Dd + Nq + Rel + Nr

NP + aR + T + N + Dd + Nq + Rel + Mq + Rel + Nr

kyooin no kumiaiin kanari tasuu no aida (relations among considerably many members of the organization who are teachers)

[#[kumiaiin ga kyooin de aR U]_S#[kumiaiin]_N[kanari]_{Dd}
[tasuu]_{Nq}[no]_{Rel}[aida]_{Nr}]_{NP}

V + Asp + T + N + Dd + Nq + Rel + Nr

watte simatta sara tatta itimai no soba (a place near the only one plate which someone had broken)

[#[sara o watte simaW Ta]_S#[sara]_N[tatta]_{Dd}[itimai]_{Nq}[no]_{Rel}
[soba]_{Nr}]_{NP}

#S# + N + Dd + Nq + Rel + Dd + Nr

AN + aR + T + N + Dd + Nq + Rel + Dd + Nr

akai kami moo itimai no unto hazi (the very edge of the one more red paper)

[#[kami ga akaK aR U]_S#[kami]_N[moo]_{Dd}[itimai]_{Nq}[no]_{Rel}[unto]_{Dd}
[hazi]_{Nr}]_{NP}

#S# + V + T + N + Dd + Nq + Rel + Dd + Nr

yuurei ga iru to sinziru kodomo honno sukosi no unto tikaku (a place very near to the so few children who believe that a ghost exists)

[#[kodomo ga yuurei ga ir U to sinzir U]_S#[kodomo]_N
[honno]_{Dd}[sukosi]_{Nq}[no]_{Rel}[unto]_{Dd}[tikaku]_{Nr}]_{NP}

We also have such constructions as *Det + #S# + N*. That is to say, both *#S#* and *Det* can be taken at a time. One example will be illustrated below:

Det + #S# + N

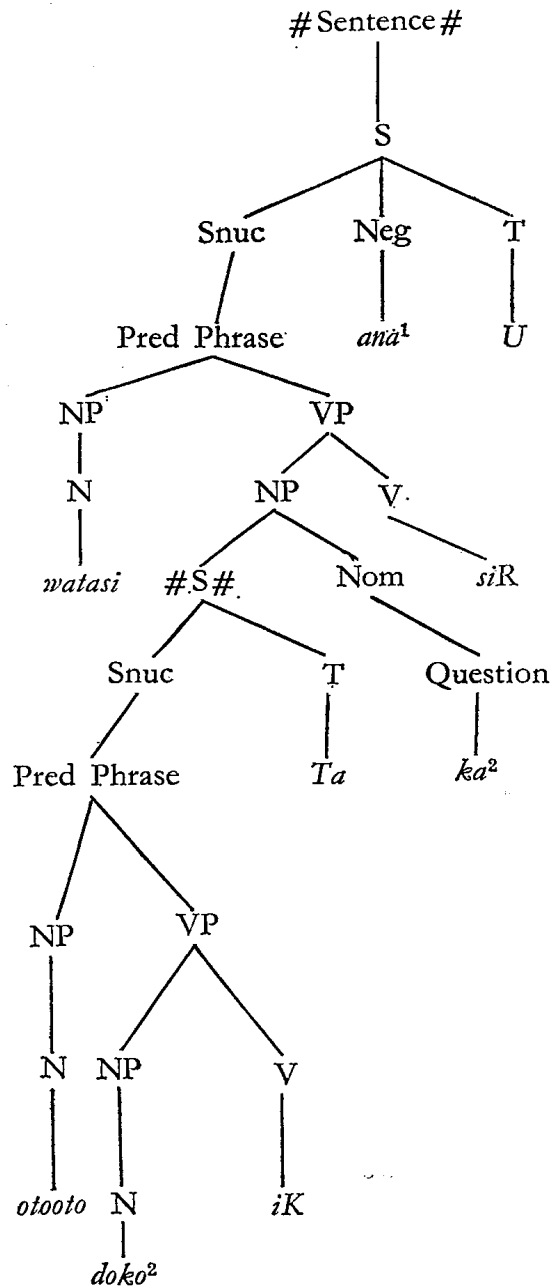
Detx + AN + N

saru yuumei na gaka (a certain famous artist)

[[saru]_{Det}#[gaka ga yuumei de aR U]_S#[gaka]_N]_{NP}

2.2.4. In this section some examples of the group 4), *Nom* with #S#, will be discussed. As was indicated in categorial rule 16, *Nom* can be

Fig. 2



¹ Japanese negation has many problems. In this example, negative morpheme *Neg* is developed into *ana* tentatively as described in p. 24. *siR* % *ana* % *U* is considered to be changed into *siranai* by morphological rules.

² *Question* is developed into *D*%*ka* in this string and *D* is attached to the *N* before *iK*, making *doko*.

further developed into the subclasses, *Question* and *koto*. We saw in categorial rule that *Question* is dominated from *Mod*. (See p. 59). In order to see why it appears in *NP* again, consider the following:

watasi wa ootoo ga doko ni itta ka o siranai

(I don't know where my brother went.)

In this sentence, we have to identify *otooto ga doko ni itta ka* as *NP*, or else we cannot generate this sentence from the base rules described in 2.1. The proper analysis of this example will be shown as Fig. 2 on P. 75.

We should make *Question* clear here. This is developed into $(D)Q$ in categorial rules as was suggested on p. 59. *D* is a morpheme which is attached to a string to be questioned and makes *dore* (which), *dare* (who), *doko* (where), *dono* (which), *itu* (when), etc. *Q* is substituted by lexical rules for $(no)ka$ or *kadooka*. $(no)ka$ can occur both in *NP* and *Mod*, but *kadooka* occurs only in *NP* which has no *D* as its constituents. This fact can be described in the lexicon as the feature of *kadooda* like [+Question, -Mod, -D, +Nom, ...], while $(no)ka$ is [+Question, +Mod, +D, +Nom, ...].

A few more examples of #S# *Question* will be shown below.

baha wa oyu ga waita kadooka watasi ni tazumeta

#S# *Question*

(Mother asked me whether water boiled or not.)

dare mo kagi ga doko ni aru noka wakaranai

#S# *Question*

(Nobody knows where the key is.)

When we take *koto* for *Nom*, we have such examples as follows:

watasi wa kare ga kinoo kara byooki datta koto o sitta.

#S# *koto*

(I noticed that he had been ill since yesterday.)

yakusoku o mamoru koto wa toozen da.

#S# *koto*

(It is a matter of course to keep his promise.)

Notice we can substitute *no* for *koto* in these examples as:

watasi wa kare ga kinoo kara byooki datta no o sitta.
yakusoku o mamoru no wa toozenda.

As these expressions can be considered a stylistic variant of the former examples, the transformation which substitutes *no* for *koto* is optional.

2.2.5. The construction #*S*# plus *N* substituted for no lexical item, that is #*S*# + Δ will be discussed here. As for the function of Δ , some examples were shown on p. 62. That is to say, when we choose Δ in *Purpose* or *Reason*, we delete *sur*+*T* and *no* if it is followed by *tame ni*. For example, we convert *gorufu o sini* Δ (in order to play golf), *zangyoo o sita tame ni* Δ (as someone worked overtime) and *tikoku o sita tame in* Δ (because someone was late) into *gorufu ni*, *zangyoo de* and *tikoku no tame ni*, respectively. We also have such examples as follows:

kare ga sippai o sita tame ni Δ \longrightarrow
 (because he failed)

kare no sippai no tame ni

naikaku o kyooka suru tame ni Δ \longrightarrow
 (in order to strengthen the cabinet)

naikaku no kyooka no tame ni

sitizi ni syuppatu suru tame ni Δ \longrightarrow
 (in order to start at seven)

sitizi no syuppatu no tame ni

titi to soodan suru tame ni Δ \longrightarrow
 (in order to consult Father)

titi to no soodan no tame ni

Considering these examples, we can make much clearer the function of Δ . In other words, not only deleting *sur*+*T* and adding *no* before *tame*, it also adds *no* after every *NP*.

As was mentioned on p. 60, particles following each *NP* are given at the final stage of grammar. When we have a string #*S*# Δ , particles are added between *NP* and *no* except *ga*, *ni* and *o* as was shown in the above examples. Sometimes *de* is not added between *NP* and *no* either. Consider the following examples:

- a) *buki de no tataakai*
 (fighting with weapons)
saigo made no seriai
 (struggle to the last)
kinoo no koodoo de no gakutyoo no hanasi
 (the president's lecture given at the auditorium yesterday)
- b) *siken no mutukasisa*
 (difficulty of the examination)
hana no utukusisa
 (beauty of the flower)
tatemono no rippasa
 (splendidness of the building)
kikoo no ondansa
 (mildness of the climate)

We immediately notice that the following sentences underlie the examples given above.

- a') *buki de tatakau*
 (Someone fights with weapons.)
saigo made seriau
 (Someone struggles to the last.)
kinoo koodoo de gakutyoo ga hanasita
 (The president lectured at the auditorium yesterday.)
- b') *siken wa mutukasii*
 (The examination is difficult.)
hana wa utukusii
 (The flower is beautiful.)
tatemono wa rippada
 (The building is splendid.)
kikoo wa ondanda
 (The climate is mild.)

Besides we find the relationship between a) and a') or b) and b') to be very similar to that of *sekiz yuuji no syutyoo* and *sekiz yuuji ga syutyoo suru*. In other words, we should analyse the examples in a) and b) as the

nominal construction, #S# Δ . a) is a group of examples where the gerundive form of some verbs serves as nominals and b) has *Adj* or *AN* plus *sa* as nominals. Throughout the above discussion, the function of Δ becomes detailed and somewhat complicated.

Before setting up rules for this construction, we should notice some exceptional cases. We have many verbs whose gerundive forms can not be nominals, such as *sini* from *sinu* (die), *ki* from *kiru* (wear), *tabe* from *taberu* (eat) etc. They can be used as nominal expressions with *kata* (way), *basyo* (place), *toki* (time) etc. such as *kikata* (way of wearing) *sinibasyo* (place to die) *tabedoki* (time to eat). But they have apparently some different meaning from the gerundive nominals, which are attached by *kata*, *basyo*, *toki*, etc.¹ These two groups of verbs, whose gerundive forms can be nominals or not, are distinguished here by their features [+ Δ] and [- Δ], tentatively. The verbs which have a feature [- Δ] do not have gerundive nominals. *Adj* does not have such a problem but *AN* has. Consider such examples as **rikoosa* < *rikoo* (clever), **sukisa* < *suki* (fond), **sinpotekisa* < *sinpoteki* (progressive). These *AN*s can be also treated as having a feature [- Δ], tentatively.

Among the many elements of #S# in this construction, we must notice the behavior of *Manner*. It is developed into *Adj*, *AN* and *Man* by rule 25 on p. 63. When we choose *Man* as *Manner*, such sentences as *kare wa kippari mooside o kyozetu sita* (He refused the proposal flatly.), *oba wa nikkori hoboenda* (My aunt smiled.) or *kagaku wa dondon sinpo suru* (Science advances rapidly.) can be generated. Then how will *NPs* including these sentences and Δ be? Consider the following:

kare no kippari sita mooside no kyozetu

(his flat refusal of the proposal)

oba no nikkori sita honoemi

(my aunt's smile)

**kagaku no dondon sita sinpo*

(the rapid advance of science)

¹ We have many problems about this kind of nominal construction, for the suffix-like elements, such as *kata*, *basyo*, *huri*, have complicated natures. Therefore we shall not investigate this any further in this study.

T.8.

structure index:
$$\left[\# \left[\underbrace{X}_{1} + \underbrace{Man_x^1}_{2} + \underbrace{[+N]}_{VP} + \underbrace{Y}_{4} \right]_S \# [\Delta]_N \right]_{NP}$$

structural change: 1 2 3 4 5 \longrightarrow 1 2 *sita* 3 4 5

2.2.6. Finally we will discuss the construction $\#S\#N$ in this section. Some examples which belong to this group are given below:

- a) *kootuuseiri no omawarisan*
(a policeman for traffic control)
- b) *gaitoo no eri*
(a coat collar)
- c) *Koorin no kinbyoobu*
(Koorin's golden screen)
- d) *kotori no mise*
(a bird shop)
- e) *kaxi no beteran*
(an expert in housekeeping)

The constituent structure of all the above examples is $N_1 + no + N_2$. We can generate this constituent structure by *Relativization Erasure Transformation*. For example, consider the following:

kootyoo no ozi
(an uncle who is a principal)

$$\left[\# [ozi\ ga\ kootyoo\ de\ aR\ U]_S \# [Ozi]_N \right]_{NP}$$

nihonzin no haiyuu
(a Japanese actor)

$$\left[\# [haiyuu\ ga\ nihonzin\ de\ aR\ U]_S \# [haiyuu]_N \right]_{NP}$$

These are made by Relativization from a copulative sentence whose predicate is *NP*. If the examples a)–e) are generated by the same process as this, their underlying structures must be $N_2\ ga\ N_1\ de\ aR\ U$,

¹ *Man_x* means those *Man* which is followed by *sita* in $\#S\#\Delta$, such as *yukkuri*, *kip-*pari**, etc. *Adj* and *AN* are given their ending such as *i*, *ku*, *na*, *ni*, at the final position of grammar just like the case of *NP* and particles, according to the feature of their following elements. That is to say if they are followed by an element with $[+N]$, their endings are *i* and *na* respectively.

and the relation of the two nouns should be $N_2 \in N_1$ or $N_1=N_2$.

- a') *omawarisan wa kootuuseiri da*¹
- b') *eri wa gaitoo da*
- c') *kinbyoobu wa Koorin da*
- d') *mise wa kotori da*
- e') *beteran wa kazji da*

We soon recognize that these a')–e') sentences do not have $N_2 \in N_1$, or $N_1=N_2$ relation between N_1 and N_2 . Besides some of them are quite unnatural and cannot be accepted by native speakers. Some people² propose that a')–e') are the underlying structure of a)–e), and they are generated by *Reduction Transformation* which deletes *V*. However, the fact that some of the results of *Reduction Transformation* which can delete so many lexical items is unacceptable shows this proposal is not so convincing. Results of *Reduction Transformation* seem to belong to a somewhat different level of construction in the grammar. Accordingly some new treatment is required for these constructions.

Consider the following expressions:

- a'') *kootuuseiri o suru omawarisan*
(a policeman who controls traffic)
- b'') *gaitoo ni aru eri*
(a collar which a coat has)
- c'') *Koorin no kaita kinbyoobu*
(a golden screen which Korin made)
- d'') *kotori o uru mise*
(a store which sells birds)
- e'') *kazji de natta beteran*
(an expert which someone became in housekeeping)

a'')–e'') have the same meaning as a)–e). That is to say, when we hear expressions like a)–e), we understand their meaning thinking of

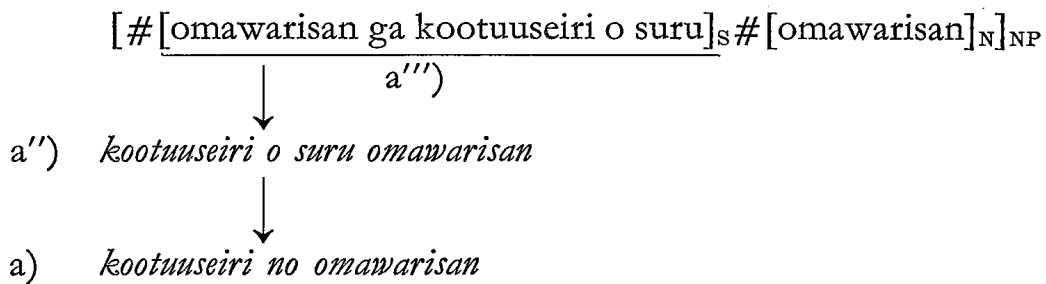
¹ As was indicated on p. 61, *Wa Red* is often chosen with copulative sentences. Accordingly, all the examples shown here are the result of the choice of *Wa Red*.

² Hiroshi Sugita, "An Approach to a Generative Grammar of Japanese—A Study of Japanese Noun Modification—" (unpublished Master's thesis, English Teaching, International Christian University, 1966).

a'')-e''). a'')-e'') are generated by *Relativization Erasure Transformation* from the following sentences:

- a''') *omawarisan ga kootuuseiri o suru*
(A policeman controls traffic.)
- b''') *gaitoo ni eri ga aru*
(A coat has a collar.)
- c''') *Koorin ga kinbyoobu o kaita*
(Korin made a golden screen.)
- d''') *mise de kotori o uru*
(A store sells birds.)
- e''') *kazji de beteran ni natta*
(Someone became an expert in housekeeping.)

Now it becomes somewhat clear how the nominal constructions a)-e) are generated. a'')-e'') are all #S# in NP, which serve as relative clauses. See the illustration below:



As is shown above, a'') is directly underlies the structure a). The change between a'') and a) is that *no* is substituted for *o suru*. This reminds us of the examples of *Reason* or *Purpose* on p. 62. When *Reason* or *Purpose* requires *tame ni*, #S# containing *sur* plus Δ changes in just a similar way. That is to say, *sur* is deleted and *no* substitutes for it. Therefore, it seems to be reasonable to use Δ for the description of the change of a'') into a). Another reason exists for this use of Δ . Compare the following three strings:

- f) *kyoo butari ga deito suru bashyo*
(a place where the couple has a date today)
- g) *kyoo no butari no deito no bashyo*
- h) **kyoo butari ga deito no bashyo*

These strings show that when we delete *suru* in #S# as a relative clause,

we must add *no* after every *NP* in $\#S\#$. This is the very function of Δ described in 2.2.5. Accordingly, examples a)–e) are considered to have a construction $\#S\#\Delta N$.

In order to analyse this construction more precisely, let us examine some examples which are similar to a)–e). As we have gone rather into detail for a), b)–e) are to be discussed hereafter.

As for b), we have the following examples which seem to have the same type construction:

- i. *Nyuyyooku no zooryuusyakai*
(high society in New York)
- ii. *watakusitati no katei*
(our home)
- iii. *teigakunen no seito*
(pupils in lower grades)

When we consider the underlying structures for i–iii, we think of the following:

- i'. *Nyuyyooku ni aru zooryuusyakai*
(high society which is in New York)
- ii'. *watakusitati ni aru katei*
(home which is for us)
watakusitati no $\left\{ \begin{array}{l} \textit{motu} \\ \textit{yuusuru} \end{array} \right\}$ *katei*
(home which we have)
watakusitati no zokusu katei
(home which we belong to)
- iii'. *teigakunen ni iru seito*
(pupils who are in lower grades)
teigakunen ni zokusu seito
(pupils who belong to lower grades)

Notice that ii' and iii' has more than two underlying structures. However, the content of their meaning can be considered as being the same.

In the case of c), see the examples below:

- iv. *haha no sityuu*
 ↑
 haha no tukuru sityuu

- (stew cooked by Mother)
- v. *Mootuaruto no kookyookyoku*
 ↑
Mootuaruto no sakkyoku sita kookyookyoku
 (a symphony composed by Mozart)
- vi. *Robaato Waizū no “Sound of Music”*
 ↑
Robaato Waizū no seisakusita “Sound of Music”
 (“Sound of Music” produced by Robert Wise)
- vii. *ani no syasin*¹
 ↑
ani no totta syasin
 (a photo taken by my brother)
 ↑
ani o totta syasin
 (a photo of my brother)

Some of the examples similar to d) are:

- viii. *me no kusuri*
 ↑
me o naosu kusuri
 (medicine which cures eyes)
- ix. *ame no bukuro*
 ↑
ame o ireru bukuro
 (a bag which one packs with candy)
- x. *Taroo no ie*²
 ↑
Taroo no sumu ie
 (a house where Taro lives)

As for e), we have such similar examples as:

- xi. *kyooinseikatu no keireki*
 ↑
kyooinseikatu no naru keireki
 ↑
kyooinseikatu ga keireki ni naru
 (Teaching life serves as antecedents.)
- xii. *toosen rokkai no zisseki*
 ↑

¹ Of course we have one more underlying structure, *ani no motu syasin* (a picture which my brother has), but this belongs to group b). Therefore we neglect it here.

² This can be interpreted as *Taroo no motu ie* (a house which Taro has), but we also neglect it here.

toosen rokkai no naru zisseki

↑
toosen rokkai ga zisseki ni naru

(To be elected six times serves as accomplishment.)

Through the examples shown above, the nature of each group a)–e) becomes considerably clear. We can sum up the structures from which they are transformed as:

group a) $[X + N +_{\text{sur}} + T + N]_{\text{NP}}$
 $[+_{\text{V}}]$

group b) $[X + N + V + T + N]_{\text{NP}}$
 $\left[\begin{array}{l} [+_{\text{Comp}}] \quad \left\{ \begin{array}{l} \text{aR} \\ \text{ir} \\ \text{zokuS} \end{array} \right\} \\ [+_{\text{VP}}] \quad [+_{\text{possessional}}] \end{array} \right]$

group c) $[X + N + V + T + N]_{\text{NP}}$
 $\left[\begin{array}{l} [+_{\text{VP}}] \quad [+_{\text{productional}}] \quad [+_{\text{V}}] \\ [+_{\text{V}}] \quad \quad \quad [+_{\text{NP V}}] \end{array} \right]$

group d) $[X + N + V + T + N]_{\text{NP}}$
 $[+_{\text{V}}] \quad [+_{\alpha}] \quad [+_{\alpha}]$

group e) $[X + N + \text{naR} + T + N]_{\text{NP}}$
 $[+_{\text{Comp}}]$

What is written in square brackets under some category symbols is a feature which the category has. $[+_{\text{V}}]$ means this *N* is the obligatory element which is nearest to *V*. $[+_{\text{Comp}}]$ shows this *N* is dominated by *Comp* and $[+_{\text{VP}}]$ shows it is a grammatical subject. $[+_{\text{NP V}}]$ means it is an obligatory element requiring *ni* at the final state of grammar. $[+_{\text{possessional}}]$ is a feature which is common to such verbs as *moT*, *yuusur*, or *syoyuusur* (have) which means possession. $[+_{\text{productional}}]$ is a feature which is common to such verbs as *tukuR* (make, cook), *sakkyokusur* (compose), *kak* (paint, write), or *seisakusur* (produce), whose meaning is to produce something. $[+_{\alpha}]$ appearing in group d) means that *N* and *V* have the same feature. That is to say, the second *N* in the structural description of group d) has a feature which uniquely specifies *V*. The second *N* and *V* has one to one correspondence and this fact is represented as having the common feature $[+_{\alpha}]$. Now consider once again examples viii–x. *kusuri* (medicine) is a thing to *cure* (*naoS*) something. So *kusuri* has the feature $[+_{\text{naoS}}]$ and this is common to

the verb *naoS*. *bukuro* (a bag) is a thing in which we pack (*irer*) something, and the common feature is [+irer]. As *ie* (a house) is a place to live in (*suM*), [+suM] serves as a common feature. *mise* (a store) in example d) is a place to sell (*uR*) things. Therefore [+uR] is a common feature.

We have not yet fully discussed the function of Δ in this construction, though we understand the outline. First of all, we know that the directly underlying structures of a-e) are the result of *Relativization Erasure Transformation*. However, T.I on p. 69 cannot generate a)-e). because Δ is not included in its structure index. T.I should be revised as follows:

T.I. (revised)

structure index: $[\# [X \quad N \quad Y]_s \# (\Delta) N W]_{NP}$

-Source				
-Extent				
-Concomi- tative				
-Duration				
	1	2	3	4 5

structural change: 2 is erased by 4

As the result of this revision the structural descriptions for a'')-e'') on p. 88 should be revised as having Δ before the second *N*. For example, group a) has the structure:

a) $[X + \quad N \quad +sur + T + \Delta + N]_{NP}$

[+ <u>-</u> V]		
1	2	3

When we consider this as a structure index, the structural change from a'') to a) is:

1 2 3 \longrightarrow 1 no 3.

This structural change is common to all the group if we define their structural description as follows:

b) $[X + \quad N \quad + \quad V \quad + T + \Delta + N]_{NP}$

[+Comp]	$\left. \begin{array}{l} aR \\ ir \\ zokuS \end{array} \right\}$	
[+ <u>-</u> VP]	[+possetional]	
1	2	3

- c)
$$\frac{[X + \frac{N}{\left[\begin{array}{l} [+_{-}VP \\ [+_{-}V] \end{array} \right]} + \frac{V}{[+productional]} + T + \Delta + \frac{N}{\left[\begin{array}{l} [+_{-}V \\ [+_{-}NP V] \end{array} \right]}]_{NP}}{\begin{array}{ccc} 1 & 2 & 3 \end{array}}$$
- d)
$$\frac{[X + \frac{N}{[+_{-}V]} + \frac{V}{[+\alpha]} + T + \Delta + \frac{N}{[+\alpha]}]_{NP}}{\begin{array}{ccc} 1 & 2 & 3 \end{array}}$$
- e)
$$\frac{[X + N + naR + T + \Delta + \frac{N}{[+Comp]}]_{NP}}{\begin{array}{ccc} 1 & 2 & 3 \end{array}}$$

Of course, we can arrange these into one structural description, but as it seems to be somewhat complicated, we will not deal with this here. After this transformation, we get, for example, a string like

genzai no nihonde no syusyoo tosite no kare no sekinin
 ↑
genzai nihonde syusyoo tosite kare no motu Δ sekinin

(responsibility which he has now in Japan as a primeminister)

The function of Δ which adds *no* after every *NP* was described as T.7 on p. 82. However the structural index of T.7 is not suitable for the example shown above. In order to make T.7 more general, we must revise its structure index.

T.7. (revised)

structure index: $[X + \frac{W}{[+N]^1} + \Delta + Y]_{NP}$

structural change: $\Delta \longrightarrow \textit{no}$ after *NP* in *X*.

We can call the transformation on p. 89 *Relative Reduction Transformation* and this should be applied before T.7 (revised).² Therefore, it must be better to consider *Relative Reduction Transformation* as T.7 and change T.7 to T.9. These two transformations T.7 and T.9 are the keys to make the construction $\#S\#\Delta N$.

2.3. Summary and Residual Problems

Most of Japanese nominal constructions were discussed in this chapter. They are developed by categorial rule 13 and transformational rules

¹ $[+N]$ means that a category symbol W has a feature $[+N]$.

² This is an intrinsic order of transformational rules. See p. 56.

1-9. The function of the dummy symbol Δ should be noticed. Introducing this dummy symbol, we could explain the ambiguity of the problematic structure $N+no+N$ by *Relative Reduction Transformation* and *Nominal Feature Transfer*. There is one construction left unexplained whose structure is $N+no+N$. That is, $No+no+N$ such as *issoo no gyosen* (one fishing-boat). As for this, notice the construction which is generated by categorial rule 13, *gyosen issoo* (one fishing-boat). We know these two expressions have the same meaning. Therefore we can treat $Nq+no+N$ as a stylistic variant which is generated by the following optional transformation.

structure index: $\frac{X}{1} \quad \frac{N}{2} \quad \frac{(Dd)}{3} \quad \frac{Nq}{4} \quad \frac{Y}{5}$

structural change: 1 2 3 4 5 \longrightarrow 1 3 4 no 2 5

Some problems about *no* are also left unsolved. We saw that *koto* can be substituted for *no* on p. 77. However, we have such examples whose underlying element of *no* is not *koto* as follows:

- a) *Amerika ni iku no wa dare desu ka*
(Who is the one who goes to America?)
- b) *ziko ga atta no wa kinoo da*
(It was yesterday when the accident happened.)
- c) *tubame ga tobu no o mita*
((Someone) saw a swallow fly.)

As for a) and b), the problem is not so difficult. They can be described as a result of the choice of $Wa \widehat{Red}$. That is to say, if Wa is attached to a verb phrase or a predicate phrase and *Red* is also chosen, *no* is always added before Wa . Consider example b). Its underlying form is

kinoo ziko ga atta.

Wa is attached to the predicate phrase of this sentence as *ziko ga atta* Wa and this string comes automatically to sentence initial position. Then we get the string *ziko ga atta* Wa *kinoo*. In such cases in which Wa is attached to verb or predicate phrase, *Red* is always chosen and *da* is added in sentence final position. Besides, *no* is also added before Wa obligatorily and we get string b). In case of c), however, the precise function of *no* is not exactly clear to us now, though it seems to

be very similar to that substituted for *koto* as nominalizer.

CHAPTER III

ENGLISH NOMINAL CONSTRUCTIONS

3.1. English Categorical Rules

English nominal constructions will be discussed in this chapter, contrasting them with Japanese described in Chapter II.

Before we go into details of each nominal construction, let us examine English Categorical Rules. This is important because the difference of some English and Japanese nominal constructions is sometimes a result of the different base structures generated by categorial rules. What is presented below is so tentative that much investigation is required for an exhaustive study.

(1) #Sentence# \longrightarrow (DS)S(Del) (Mod)

This rule is just the same as rule (1) in Japanese on p. 59. The reason that we distinguish the initial symbol from the recursive symbol *S* is that *Sentence* has some elements which cannot appear in the recursive *S* as a constituent structure of embedding transformation. For example, *Tag* (a member of *Mod*) cannot appear in the constituent structure; **That he went to Europe didn't he is true*. *Ds* stands for *Sentence Adverbs*, *Del* for *Delimiters*, and *Mod* for *Modals*. They won't be developed any further because they are not our concern in this study.

(2) S \longrightarrow Snuc (Neg)

As a negative morpheme *Neg* can occur in a constituent string, the category *Snuc* is needed. When we compare this rule with Japanese categorial rule (2), we find the difference between them. In Japanese, tense morpheme *T* appears, and *Wa* and reducer *Red*, which make a construction of argument, are introduced. However, English has no such constructions of argument, and tense morpheme appears later.

(3) Snuc \longrightarrow NP $\widehat{\text{Pred}}$ Phrase

This rule should be compared with Japanese categorial rule (4). They show the difference of the behavior of grammatical subject in the two languages. In Japanese, the notion of grammatical subject is des-

cribed as a contextual feature [+___VP], but in English, it is represented [+___Pred Phrase]. That is to say, *NP* as a subject and *Pred Phrase* constitute exocentric construction in English, while *NP* and *VP* constitute endocentric construction in Japanese. Accordingly, *Time* and *Place* are directly dominated from *S_{nuc}* in Japanese.

(4) Pred Phrase \longrightarrow Aux \widehat{VP} (Place) (Time)

The rule which develops *Pred Phrase* is numbered (7) in the Japanese rules. Notice that Japanese rules do not have the category *Aux*. The English category *Aux* is developed into $T(M)(Asp)$. *M* represents so-called auxiliary verbs such as *will*, *can*, *may*, *shall*, *must*. What corresponds to these in Japanese is contained in *Mod* introduced in rule (1). That is to say, what is represented by *Mod* in Japanese is represented by *Mod* and *M* in English. This may be revised in the future, but some difference of English and Japanese exists in this problem. We should notice that tense morpheme *T* appears differently in English and Japanese. It has some relationship to the existence of $Wa \widehat{Red}$ in Japanese.

(5) Time \longrightarrow $\left\{ \begin{array}{l} Dt \\ P+NP \\ \#S\# \end{array} \right\}$

Dt is an adverb of time. *P+NP* introduced here is, for example, *in the morning*. $\#S\#$ dominated by *Time* generates such a string as *when I was young*.

(6) Place \longrightarrow $\left\{ \begin{array}{l} Dl \\ P+NP \end{array} \right\}$

Dl is an adverb of location. *P+NP* dominated by *Place* contains, for example, *in the room*, *on the table*, etc.

(7) VP \longrightarrow $\left\{ \begin{array}{l} \text{Copula } \widehat{(Dd)} \text{ Predicate} \\ V(\text{Prt})(NP)(\#S\#)(AD)(AD)(\text{Man}) \end{array} \right\}$

The category symbol *VP* is developed in rule (11) in Japanese. The most apparent difference of English and Japanese appeared in these rules is the order of each element. That is to say, as is known well, a Japanese verbal element comes to the final position, while English comes to the initial position. But this can be said to be a difference

in surface structures¹. So if we want, we can set up rules whose order of elements is identical. Before we determine a proper order for them, we need more investigation of many languages. The problem of *Aux* appears here again. *Asp* is introduced as a member of *VP* in Japanese, but it is involved in *Aux* in English. However, if it is reasonable to set up a category *Aux* which includes *T* and *Asp* in Japanese, we can revise this rule. The study of adverbs is extremely tentative both in English and Japanese. Accordingly, it is very dangerous to contrast the nature of adverbs in both languages only from the rules presented here. Two *ADs* in English rule (7) show the co-occurrence possibilities of adverbs. That is to say, though ten Japanese adverbs can co-occur, only two are possible in English.

$$(8) \text{ Predicate} \longrightarrow \left. \begin{array}{l} \{ \text{Adj} \\ \text{(like) NP} \} \end{array} \right\}$$

This rule can be compared with Japanese rule (12). Although *AN* is a category which appears only in Japanese, it can be regarded as a morphological variant of *Adj*. So this rule does not show any problematic difference between English and Japanese.

$$(9) \text{ NP} \longrightarrow \left. \begin{array}{l} \{ \text{Det(Nq)N}(\Delta) \\ \text{Nom} \} \end{array} \right\} (\#S\#)$$

This rule is so important that all the nominal constructions are generated from it, just as in the case of Japanese. We notice that it is much simpler than Japanese rule (13) which expands *NP*. Although details will be discussed in the following section, we must consider two apparent differences here. One is that English does not have a category corresponding to *Nr* in Japanese. The other is English *Nq* has some different nature from Japanese. It seems that Japanese *Nq* is more nounal, while English is more adjectival. However, this can be the difference caused only by their morphological behavior.

$$(10) \text{ AD} \longrightarrow \text{Direction, Duration, Reason, etc.}$$

¹ Some suggest that the categorial component should be an unordered set-system. However this problem seems to be entirely empirical and they have not given any empirical support to this theory. See Chomsky, *Aspects of the Theory of Syntax*, pp. 124-5.

As was indicated before, the study of adverbs is so tentative that the elements dominated by *AD* are not exhausted yet.

$$(11) \text{ Nom} \longrightarrow \left\{ \begin{array}{l} \text{that} \\ \text{Question} \end{array} \right\}$$

This rule is very similar to Japanese rule (14). We have said nothing about *Question* in English rules, but it is also dominated by *Mod* just like Japanese *Question*. However, like in Japanese the behavior of *Question* is somewhat different according to the node which dominates it. The difference will be shown in the following section.

$$(12) \text{ Man} \longrightarrow \left\{ \begin{array}{l} \text{Adj} \\ \text{P+NP} \end{array} \right\}$$

Adj dominated directly by *Man* receives *-Ly* automatically. This can be compared with Japanese *Adj* which requires *ku* when it is dominated by *Manner*.

$$(13) \text{ Direction} \longrightarrow \text{P+NP}$$

$$(14) \text{ Duration} \longrightarrow \text{P+NP}$$

$$(15) \text{ Reason} \longrightarrow \text{P+NP}$$

Rules (13), (14), and (15) develop three members of adverbs. They are all developed into prepositional phrases. For example, (13) *to the grocery store*, (14) *for an hour*, (15) *for his virtue*, etc.

$$(16) \text{ Dd} \longrightarrow \left\{ \begin{array}{l} \text{Adj} \\ \text{Ddx} \end{array} \right\}$$

Just as in the case of *Man*, *Adj* dominated by *Dd* requires *-Ly*. They are, for example, *extremely*, *strangely*, *comparatively*, etc.

$$(17) \text{ Aux} \longrightarrow \text{T(M)(Asp)}$$

We have seen this rule before. See p. 93.

$$(18) \text{ Nq} \longrightarrow \left\{ \begin{array}{l} \text{Nn} \\ \text{Nqx} \end{array} \right\}$$

$$(19) \text{ T} \longrightarrow \left\{ \begin{array}{l} \text{Present} \\ \text{Past} \end{array} \right\}$$

$$(20) \text{ Dt} \longrightarrow \Delta$$

Hereafter, all the rules change category symbols into the dummy symbol Δ . Some lexical items to be substituted for the dummy symbol will be given after each rewriting rule.

- (*now* [+Time, +Present, . . .]) (*last year* [+Time, +Past, . . .])
- (21) DI \longrightarrow Δ
 (*indoors* [+Place, +direction . . .])
 (*there* [+Place, +direction, +Definite, . . .])
- (22) Copula \longrightarrow Δ
 (*seem* [+Copula, +__Adj, . . .]) (*be* [+Copula, . . .])
- (23) V \longrightarrow Δ
 (*known* [+Verb, +__NP, +[+Animate]Aux__Det,
 +__[that] . . . S . . .])
- (*sing* [+Verb, +__, +[+Animate]Aux__, . . .])
- (24) Adj \longrightarrow Δ
 (*red* [+Adjective, +color, . . .]) (*poor* [+Adjective, +lack, . . .])
 (*quiet* [+Adjective, -noise, . . .])
- (25) Nn \longrightarrow Δ
 (*one* [+Noun, +Quantity, +Numeral, . . .])
 (*two* [+Noun, +Quantity, +Numeral, . . .])
- (26) Nqx \longrightarrow Δ
 (*many* [+Noun, +Quantity, -Numeral, +Countable, . . .])
 (*little* [+Noun, +Quantity, -Numeral, -Countable, . . .])
- (27) P \longrightarrow Δ
 (*in* [+Preposition, +Place, +Time, . . .])
 (*at* [+Preposition, +Place, +Time, . . .])
- (28) M \longrightarrow Δ
 (*may* [+M, +Conjecture, . . .]) (*can* [+M, +Possibility, . . .])
- (29) Det \longrightarrow Δ
 (*the* [+Determiner, +Definite, -Demonstrative, . . .])
 (*some* [+Determiner, -Definite, +__[+Plural], -Specific])
 (*this* [+Determiner, +Definite, +Demonstrative,
 +__[-Plural], +Specific])
- (30) Ddx \longrightarrow Δ
 (*very* [+Dd, +Intensification, . . .]) (*too* [+Dd, +Addition, . . .])

3.2. Nominal Constructions

We have seen a part of the English categorial rules and lexical items,

and considered their difference from Japanese. Now the nominal constructions will be discussed. As explained in Chapter II, what we call nominal constructions are those which are dominated by the category symbol *NP*. That is to say, rule (9) defines English nominal constructions. If we group them just as in the case of Japanese, we should have the following:

- | | |
|---|-------------------------------------|
| 1) <i>Det+N</i> | 2) <i>Det+Nq+N</i> |
| 3) <i>Det+N+#S#</i> | 4) <i>Nom+#S#</i> |
| 5) <i>N</i> substituted for no lexical item, plus <i>#S#</i> (<i>Det+Δ+#S#</i>) | |
| 6) <i>Det+N+Δ+#S#</i> | 7) <i>N</i> with pre-noun modifiers |

We will discuss these groups in numerical order, showing some examples.

3.2.1. Examples of group 1) are presented in this section. The analysis of determiners has not been exhausted yet. Although many problems are left unsolved, what belongs to this group includes such examples as follows:

the book	a boy	an engineer
this dog	those ostriches	
any house	ϕ girls	

C. J. Fillmore presents a very remarkable analysis for determiners.¹ That is, he develops *NP* into *Det(N ∅ S)*. His unique point is that the obligatory element of *NP* is not *N* but *Det*. *Det* covers all the pronouns, determiners and demonstratives in the usual sense. He presents *feature-modifying transformations* as a device which copies the features of nouns onto determiners. Such features as [\pm Plural, \pm Count, \pm Gender, \pm Masculine, \pm Human, \pm Accusative] are copied onto determiners. This analysis shows many advantages to the treatment of pre-nominal elements in a quite unified way. However, considering the nature of the determiner itself, comparing it with Japanese, this treatment seems to assign too strong a nature to the category, determiner. In the case of Japanese, we cannot describe determiner as an obligatory element

¹ C. J. Fillmore, "On the Syntax of Preverbs", (unpublished), pp. 10-16.

of *NP*, leaving *N* as an optional element. Accordingly, we adopted *Det* and *N* both as obligatory elements of *NP*. *Det* is a lexical category which is rewritten as a dummy symbol and this dummy symbol is substituted for *the*, *some*, ϕ , etc, by lexical rules.

Comparing this construction with Japanese, we have the same construction *Det+N* in Japanese. However, when we consider their derivational history the difference becomes apparent. That is to say, the difference is that *Det* is an obligatory element in English, while in Japanese, it is an optional element. This difference should be noted. Furthermore, the content of the category *Det* is different in English and in Japanese. Especially many features which Fillmore suggested for *Det* involve much difference between the two languages. This point causes some interference as described in Kleinjans' book,¹ when Japanese students learn English.

3.2.2. The examples which belong to group 2) will be shown here.

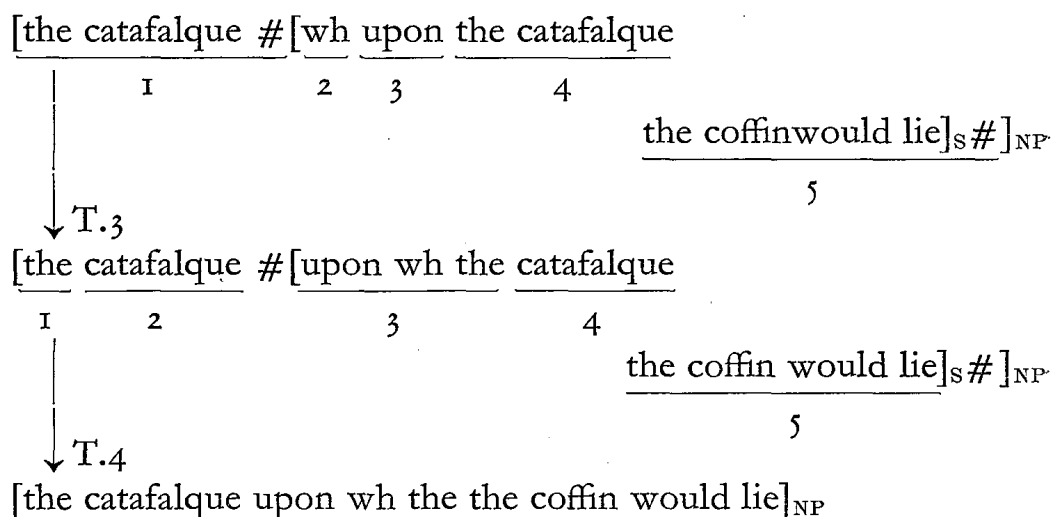
<i>Det+Nn+N</i>	ϕ one book
	these five problems
	those three states
<i>Det+Nqx+N</i>	ϕ many foreigners
	a few mistakes
	ϕ much sugar

Notice that *Nqx* often requires ϕ as *Det*.

Comparing this construction with Japanese, we find *Nq* in Japanese comes after *N*, and also it comes to the pre-noun position by transformation as *issatu no hon* (one book). Also category *Clf* does not appear in English. This is a difference between English and Japanese

3.2.3. In this section, the construction of group 3), *Det N #S#* will be discussed. If we neglect the existence of *Det*, we see the Japanese construction *#S#N* corresponding to this. Let us consider some examples of this construction.

¹ Kleinjans, op. cit., p. 270-1.



We need more rules in order to introduce the so-called relatives. The following rules serve this purpose:

T.5.—*Feature Transfer*

a. structure index: $X \text{ wh}[\alpha \text{ definite}] \begin{bmatrix} \alpha \text{ Human} \\ \beta \text{ Accusative} \\ \gamma \text{ Genitive} \end{bmatrix} Y$

$$\begin{array}{cccccc}
 \hline
 1 & 2 & 3 & 4 & 5 \\
 \hline
 \end{array}$$

structural change: $1 \ 2 \ 3 \ 4 \ 5 \longrightarrow 1 \begin{bmatrix} 2 \\ 3 \\ 4 \end{bmatrix} 4 \ 5$

b. structure index: $X \begin{bmatrix} \alpha \text{ Place} \\ \beta \text{ Time} \\ \gamma \text{ Manner} \\ \delta \text{ Reason} \end{bmatrix} \begin{Bmatrix} \text{which} \\ \text{what} \end{Bmatrix} Y$

$$\begin{array}{cccc}
 \hline
 1 & 2 & 3 & 4 \\
 \hline
 \end{array}$$

structural change: $1 \ 2 \ 3 \ 4 \longrightarrow 1 \begin{bmatrix} 2 \\ 3 \end{bmatrix} 4$

T.5a should be applied before T.4. Although we have not discussed *Question*, this rule T.5 is to be applied to a string containing *Question*. In case of Japanese, *Question* is developed into $(D)Q$, while in English, it is developed into $(wh)Q$. A string which has *wh* dominated by *Question* should fit the structure index of T.5a.¹ When *wh* is introduced by T.1, T.5a gives relative pronouns and T.5b generates relative adverbs.

¹ We have not investigated *Question* sufficiently. In order to cover all the constructions of *wh*-question, T. 5 must be revised.

In case of example iii, T.5a applies to the string generated by T.3 and the feature [$-$ Human, $+$ Accusative, $-$ Possessive, $+$ Definite] is transferred to *wh*, which then becomes *which*.¹ We can generate a grammatical construction by the application of T.5b to example iii. That is to say, the feature [$+$ Place] which the category *P* (*upon* in this example) has, is transferred to *which*, and we get *where*. The nominal construction, *the catafalque where the coffin would lie*, whose structure is similar to example iv is generated in this way. As is shown by this example, T.5b is an optional transformation.

Comparing this construction with Japanese $\#S\#N$, we find the difference in the operations of transformational rules. That is, Japanese relative constructions can be generated by only one rule, but English must go through at least four rules. English rule T.4 and Japanese rule T.1 have very similar functions. However, English relative construction requires at least two rules before the application of T.4 and one after it. This shows more complexity of English relative constructions. Another difference between English and Japanese is the restriction written in Japanese rule T.1. That is to say, the nouns which can be relativized should not be dominated by *Source*, *Extent*, *Concomitative*, and *Duration*, while English does not have such restrictions. This means that is a considerably great difference between English and Japanese. An expression like *a town from which the man came*, for example, is considered to be difficult for Japanese students.

3.2.4. The construction $Nom + \#S\#$ will be presented in this section. As shown on p. 95, *Nom* is developed into *that* or *Question*. First, let us consider the construction $that + \#S\#$. See the following examples:

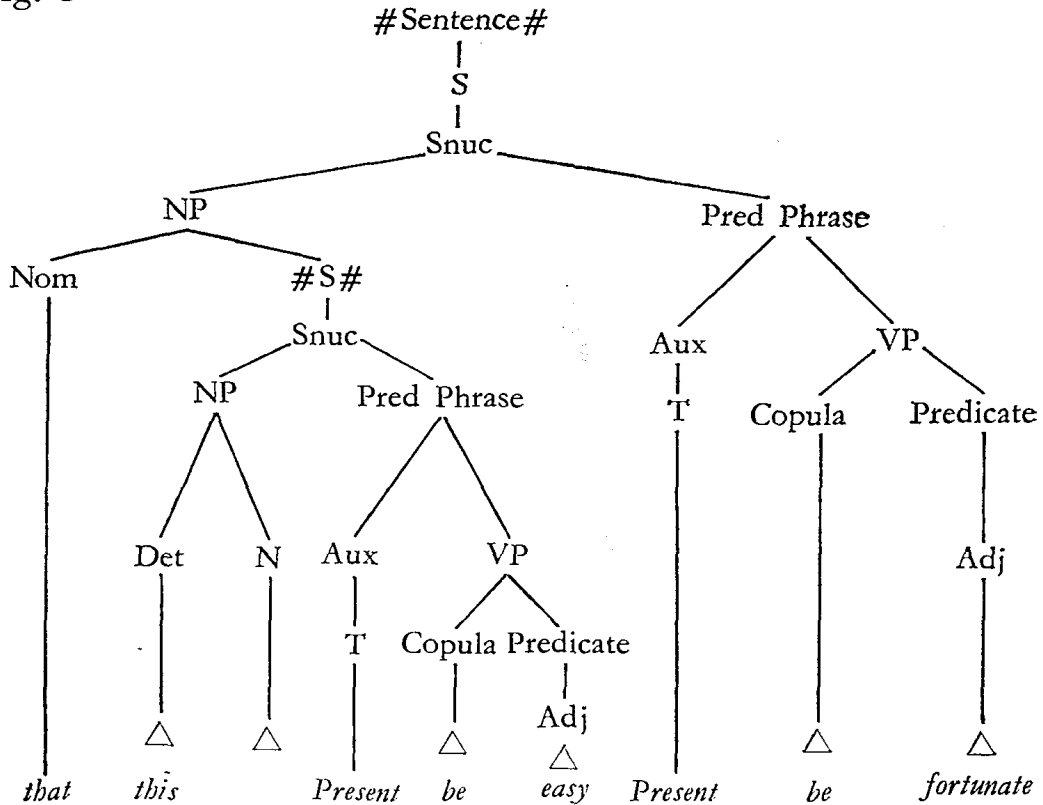
- i. *That this is easy* is fortunate.
- ii. He believed *that she was sick*.

¹ Considering the syntactic component described on p. 58, the introduction of such formatives as *which* is brought up as a problem. That is to say, as it should come after a transformational component, lexical rules cannot introduce them. In order to solve this problem, Fillmore suggests that we have two kinds of lexicon, *major lexicon* and *minor lexicon*. Major lexicon contains content words, while minor lexicon has function words. C. J. Fillmore, "On the Syntax of Preverbs".

- iii. I know *that Mary will marry him*.
- iv. *That he left early seems certain*.

The P-marker of example i is as follows:

Fig. 3



The formation of this construction is just the same as that of Japanese construction *#S#koto*. That is, both of them are generated by categorial rules requiring no special transformational rules. Auxiliary transformation and a transformation which deletes boundary symbols from this kind of embedding construction are needed. The difference between English and Japanese in these constructions is only the position of *Nom*.

When we take *Question* for *Nom*, we have such examples as follows:

- v. I know *where he went*.
- vi. *Who she is* does not matter.
- vii. I did not notice *whether she came*.
- viii. He asked me *if I was a Japanese*.
- ix. *Whom he likes* concerns no one.

structural description.¹

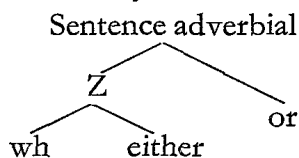
Contrasting this construction with Japanese, we notice that they are also very similar. Though we have not seen a precise operation for introducing such words as *dare* (who), *doko* (where), etc, it will be very similar to that of English. The difference we should notice about this construction is only that *Nom* comes before #S# in English, while in Japanese it comes after #S#.

3.2.5. In this section, group 5), the construction *Det*+ Δ + #S#, that is, *N* substituted for no lexical item plus #S# will be discussed. Some of the examples will be shown below.

- (1) i. The loud beating of my own heart
- ii. her graceful dancing
- iii. their ceaseless turning of twigs
- iv. its ownership by France
- v. the shooting of officers by their men
- vi. the death of your aunt
- (2) i. her landlord's stepping in
- ii. Mary's having sung well in many concerts
- iii. the candles being lit again
- (3) i. for me to study hard
- ii. for him to live on his small pension
- iii. for John to represent them
- (4) i. the warmth of her little body
- ii. my comparative insignificance
- iii. their daughter's illness.

Lees² named these four groups of examples as (1) Action Nominal, (2)

¹ As for *whether*, Katz and Postal analysed it as having an underlying structure shown below:



This is a very interesting suggestion but much deeper analysis in sentence adverbial is required before we conclude the discussion. See Katz and Postal, *An Integrated Theory of Linguistic Descriptions* (Cambridge: the M.I.T. Press, 1964). p. 96.

² Lees, *op. cit.*

Gerundive Nominal, (3) Infinitival Nominal, and (4) Abstractive Nominal. Although his investigation is valuable, some revision is required. Katz and Postal tried the revision in *An Integrated Theory of Linguistic Description*, but it seems too *ad hoc* and somewhat clumsy. That is to say, he describes all the action nominals as being derived from a string containing *in the way*. For example, *John's driving* is generated in the following way.

John drives in the way.
 ↓
 the way that John drives
 ↓
 John's driving

However, it is evident that we do not always have underlying structures with *in the way* for action nominals. Consider example (1) iii. Its underlying structure cannot be **they turn twigs in the ceaseless way*. It should be *they turn twigs ceaselessly*. Therefore we set up the following rules for the so-called action nominalization.¹

T.7.—*Action Nominalization*

structure index:

[Det	Δ	#	[NP	T	V	(Prt)	(NP)	([Adj] _{Man}) ² X]s	#]NP
—	—	—	—	—	—	—	—	—	—	—	—
1	2	3	4	5	6	7	8	9	10	11	

structural change:

1	2	3	4	5	6	7	8	9	10	11	—————→
1	9	{Ing } {Nml}		+6	7	{of+8 by+4 } ³ {of+4		10			

T.8.—*Genitive Transformation*

structure index:	X	Det	Y	of	NP	W
	—	—	—	—	—	—
	1	2	3	4	5	6

¹ These are the new formulation of the rules originated in K. Saso's "A Study on Nexus-Nominal-Phrases".

² This *Adj* as *Man* has a suffix *-ly*. However, when it comes before {Ing }
{Nml} + 5 by T. 7, this suffix disappears. Therefore this *Adj* is considered to lose a feature—*Man* by this transformation.

³ When we have 8(NP) in the structure index, the structural change is the upper one. If not, it is the lower one.

structural change: 1 2 3 4 5 6 \longrightarrow
 1 5+Gen 3 6

T.9.—*Agentive Transformation*

structure index: [Det X by NP Y]_{NP}
 _____ [+Animate] _____
 1 2 3 4 5

structural change: 1 2 3 4 5 \longrightarrow 4+Gen 2 5

Nml is a nominal affix and this morphological problem has not been fully studied yet. They are, for example, *-tion*, *-ity*, *-ment*, etc. Examples iv, and vi in group (1) are the result of taking *Nml*. In order to explain the rules T.7–T.9, generative process of some examples will be shown below.

(1) i. [the Δ # [my own heart beats loudly]_{S#}]_{NP}
 Det NP T V [Adj]_{Man}

↓ T.7
 the loud beating of my own heart
 Ing+V

ii. [the Δ # [she danced gracefully]_{S#}]_{NP}
 Det NP T V [Adj]_{Man}

↓ T.7
 the graceful dancing of her
 ↓ T.8 Ing+V
 her graceful dancing

iii. [the Δ # [they turned twigs ceaselessly]_{S#}]_{NP}
 Det NP T V NP [Adj]_{Man}

↓ T.7
 the ceaseless turning of twigs by them
 ↓ T.9 Ing+V NP
 their ceaseless turning of twigs

iv. [the Δ # [France owns it]_{S#}]_{NP}
 Det NP T V NP

↓ T.7

the ownership of it by France

Nml+V

↓ T.8

its ownership by France

vi. [the Δ # [your aunt died]_S #]_{NP}

Det NP T V

↓ T.7

the death of your aunt

Nml+V

Examples of group (2), Gerundive Nominal, are generated by the following rule.

T.10—*Gerundive Nominalization*

structure index: [Det Δ # [NP T(Asp)VP X]_S #]_{NP}

1 2 3 4 5 6 7 8 9

structural change: 1 2 3 4 5 6 7 8 9 ———→

4+Gen, Ing+6+7, 8

(2) i. [Det Δ # [her landlord stepped in]_S #]_{NP}

↓ T.10 NP T VP

her landlord's stepping in

Ing+VP

ii. [Det Δ # [Mary has sung well in many concerts]_S #]_{NP}

NP T Asp VP X

↓ T.10

Mary's having sung well in many concerts

Ing+Ssp+VP

Here we understand the difference between action nominals and gerundive nominals. That is to say, the verbs which can be transformed into action nominals are restricted to having a feature [+Action], while the verbs of gerundive nominals do not have such a restriction. Besides, the fact that a string containing *Asp* can be transformed into gerundive nominals and that *Man* does not appear in it is a difference. The function of *of* must be noticed too.

Example iii in group (2) requires one more rule. See the following

transformation in both rule and example.

T.11.—*Genitive Deletion*

structure index: $\left[\begin{array}{cccccc} \text{NP} & \text{Gen} & \text{Ing} & \text{(Asp)} & \text{VP} & \text{X} \end{array} \right]_{\text{NP}}$
 $\left[\begin{array}{c} \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{---} \end{array} \right]$
1 2 3 4 5 6

structural change: 1 2 3 4 5 6 \longrightarrow 1 3 4 5 6

(2) iii. $\left[\text{Det } \Delta \# \left[\begin{array}{ccc} \text{the candles} & \text{are lit} & \text{again} \end{array} \right]_{\text{S}} \# \right]_{\text{NP}}$

\downarrow T.10 NP T VP X

the candles ' being lit again

NP + Gen Ing + VP

\downarrow T.11

the candles being lit again

As is shown in structure index of T.11, inanimate nouns cannot take genitive form and *Gen* is deleted by T.11.

In case of group (3), Infinitival Nominal, the following rule generates it.

T.12.—*Infinitival Nominalization*

structure index: $\left[\text{Det } \Delta \# \left[\begin{array}{cccccc} \text{NP} & \text{T} & \text{(Asp)} & \text{VP} & \text{X} \end{array} \right]_{\text{S}} \# \right]_{\text{NP}}$
1 2 3 4 5 6 7 8 9

structural change: 1 2 3 4 5 6 7 8 9 \longrightarrow
for +4 to +6 +7 8

The examples in group (3) are generated in the following way.

(3) i. $\left[\text{Det } \Delta \# \left[\begin{array}{cc} \text{I} & \text{study hard} \end{array} \right]_{\text{S}} \# \right]_{\text{NP}}$

\downarrow T.12 NP T VP

for me to study hard

ii. $\left[\text{Det } \Delta \# \left[\begin{array}{ccc} \text{he} & \text{lives on his} & \text{small pension} \end{array} \right]_{\text{S}} \# \right]_{\text{NP}}$

\downarrow T.12 NP T VP

for him to live on his small pension

iii. $\left[\text{Det } \Delta \# \left[\begin{array}{c} \text{John represents them} \end{array} \right]_{\text{S}} \# \right]_{\text{NP}}$

\downarrow T.12

for John to represent them

Here we must be careful not to confuse these examples with a verb phrase

complement. Compare the following examples.

a) I decided *for John to represent us*.

b) They hit *upon John to represent us*.

Example a) is derived by T.12, but b) is not dominated by NP. The structure of sentence b) is as follows:

[They]_{NP}[[[hit]_V[upon]_{Prt}[John]_{NP}[John represent
us]_S]_{VP}]_{Pred Phrase}

Last of all, the rule which generates group (4), Abstractive Nominal, is as follows:

T.13.—*Abstractive Nominalization*

structure index:

[Det Δ # [NP T be Adj _{Da} Adj X]_{S#}]_{NP}
1 2 3 4 5 6 7 8 9 10

structural change: 1 2 3 4 5 6 7 8 9 10

————→ 1 7 Nml+8 of+4 9

That is to say, the examples in group (4) are derived in the following manner.

(4) i. [the Δ # [her little body is warm]_{S#}]_{NP}
Det NP T VP Adj

↓ T.13

the warmth of her little body
Nml+Adj of+NP

ii. [the Δ # [I am comparatively insignificant]_{S#}]_{NP}
Det NP T be Adj_{Da} Adj

↓ T.13

the comparative insignificance of me

↓ T.8

my comparative insignificance

iii. [the Δ # [their daughter is ill]_{S#}]_{NP}
Det NP T be Adj

↓ T.13

the illness of their daughter

↓ T.8
their daughter's illness

We have so far considered the English nominal construction *Det Δ #S#*. Contrasting these constructions with Japanese *#S#* we find much more differences than similarities between them. This is because the nature of dummy symbol Δ as a nominalization marker has not been fully classified yet. It should be investigated in the future, considering both descriptive and explanatory adequacy.

3.2.6. In this section we will discuss the group 6), that is, *Det+N+Δ+#S#*. Some examples are shown below.

- i. the man from the West
- ii. the church behind the cross
- iii. the veil to hide her face
- iv. the steps ahead of her
- v. Jimmy Wells, my best chum
- vi. his egotism enlarged by success
- vii. the casket moving slowly
- viii. the names consisting of several Greek letters
- ix. a face with keen eyes
- x. the door of the hardware store

These examples are all introduced by *Relative Reduction Transformation* which has some similarities to Japanese rule T.7.

T.14.—*Relative Reduction Transformation*

- a. structure index: $[\underbrace{\text{Det N}}_1 \underbrace{\Delta \text{wh} + \text{Det be}}_2 \underbrace{\text{X}}_3]_{\text{NP}}$
 structural change: 1 2 3 \longrightarrow 1 3
- b. structure index: $[\underbrace{\text{det N}}_1 \underbrace{\Delta \text{wh} + \text{Det have}}_2 \underbrace{\text{NP X}}_3 \underbrace{\text{X}}_4]_{\text{NP}}$
 structural change: 1 2 3 4 \longrightarrow 1 with 3 4
- c. structure index: $[\underbrace{\text{Det N}}_1 \underbrace{\Delta \text{wh} + \text{Det}}_2 \underbrace{\text{NP}}_3 \underbrace{\text{have}}_4 \underbrace{\text{X}}_5]_{\text{NP}}$
 structural change: 1 2 3 4 5 \longrightarrow 1 of 3 5

In a similar way, examples ix and x are generated by T.14b and T.14c, respectively.

T.14a also generates such a string as below.

xi. the fact that kindness is a fine virtue

Its underlying structure #S# is

the fact is that kindness is a fine virtue.

Fillmore considers that nouns like *fact* should be categorized as taking a sentential complement.¹ Though it is a plausible suggestion, we tentatively regard example xi as being generated by T.14a through the same process as examples i–vii.

Although both English and Japanese have *Relative Reduction Transformation*, their behavior is different. We must notice this difference and is described in each rule.

3.2.7. Finally we will discuss the construction of group 7), *N* with pre-noun modifiers. Some of the examples which belong to this group are given below.

- i. the poor man
- ii. a handsome watch
- iii. our friend
- iv. a waiting limousine
- v. the conquered foes
- vi. Picasso's picture

Although example vi has some problem, they are all transformed from the result of T.14. The following rule serves for this construction.

T.15.—*Pre-nominal Modification*

$$\text{structure index: } \underbrace{[\text{Det N}]}_{1 \quad 2} \underbrace{\left\{ \begin{array}{l} \text{A} \\ \{\text{Ing}\} \text{ V} \\ \{\text{En}\} \end{array} \right\}}_{3} \underbrace{([\text{Adj}]_{\text{Man}})]_{\text{NP}}}_{4}$$

$$\text{structural change: } 1 \quad 2 \quad 3 \quad 4 \quad \longrightarrow \quad 1 \quad 4 \quad 3 \quad 2$$

Although this construction is generated through so many rules such as T.1, T.5a, T.4, T.14, and T.15, its constituent structure is so simple

¹ Fillmore, *op. cit.*, p. 12.

that it is very easy for Japanese to study. Kleinjans¹ concluded that this belongs to the construction which has the least interference. This is a considerably important problem. That is to say, as we understood in Chapter I, transformational generative grammar is not a theory of performance but a theory of competence. Therefore we need not teach foreign language according to the rules which generate it. This has been pointed out sometimes.²

Example vi is an ambiguous construction. Of course one of its meanings is explained by T.15. However, we think of two other meanings for it. They are “a picture (drawn) by Picasso” and “picture of Picasso”. We have some similar examples as “a boy’s coat”, “Dallas’ second assassination”. The behavior of *Gen* is one problem. It can be compared with Japanese *no*. However, *Gen* has not been so much investigated as *no*. Of course many grammarians³ have discussed this problem, but systematic generalization has not been completed. In case of “Picasso’s picture”, it seems that “a picture by Picasso” and “a picture of Picasso” have some relation to T.9 and T.8 respectively. At any rate, we need much investigation for this.

CONCLUSION

According to the theory described in Chapter I we have seen English and Japanese nominal constructions except nominal compounds throughout Chapters II and III,

Japanese nominal constructions are developed by categorial rule (13) on p. 62. Some of the constructions which this rule generates need transformational rules in order to change them into surface structures. For example, *Relativization Erasure Transformation* (T.1 on p. 89) is required for the constructions which take *N* and *#S#*. Such examples as *siroi boosi* (a white hat), *kinoo katta pen* (a pen which some one bought

¹ Kleinjans, *op. cit.*

² For example, see “Singengogaku ni kansuru muttu no situmon”, *Eigo Seinen*, August, 1965, pp. 498-507.

³ For instance, see G. O. Curme, *Syntax* (Maruzen Asian Edition, 1941), pp. 77-88, 110-1.

yesterday), etc. are generated by this transformation. *Nom*, one of the two obligatory elements in rule (13), is a nominalizer which is developed into *koto* or *Question* and makes such constructions as *watasi no sita koto* (what I did), *kimi ga sitte iru kadooka* (whether you know or not), *kare no syutyoo suru no* (that he maintains), *doko ni iku noka* (where someone goes), etc. *no* in the third example is tentatively considered as a stylistic variant of *koto*.

We noticed the function of the dummy symbol Δ in this study. It is usually introduced in the final stage of categorial rules in order to be substituted for each lexical item. The dummy symbol dominated by *N* and left as it is in the terminal string serves as a marker of nominalization, too. When we take this dummy symbol as *N* with $\#S\#$, we can make such constructions as *ziko no zooka* (increase of accidents), *Amerika kara no kaeri* (coming back from America), from $[\#[ziko\ ga\ zooka\ suru]_S\#[\Delta]_N]_{NP}$, $[\#[Amerika\ kara\ kaeru]_S\#[\Delta]_N]_{NP}$, respectively. We use *Nominal Feature Transfer* (T.3 on p. 81) and three other transformations in order to make these examples.

Another function of the dummy symbol is similar to the previous one. That is to say, an optional element Δ written in rule (13) makes such examples as follows. *Tanizaki no syoosetu* (a novel written by Tanizaki), *soozi no zikan* (time for cleaning), *budoosyu no bin* (a wine bottle), *bokusingu no tyanpion* (a champion of boxing), etc. These are the problematic constructions which were introduced as being very ambiguous in the Introduction. The dummy symbol functions, in this case, as a mark of *Relative Reduction Transformation* which explains this ambiguity. The underlying structure of the above examples are *Tanizaki no kaita* ([+productional]) *syoosetu*, *soozi o suru (sur) zikan*, *budoosyu o ireru bin* ([+ireR]), *bokusingu de naru (naR) tyanpion*, respectively. The features or formatives in parentheses are indicated in the structure index of *Relative Reduction Transformation* and only five structures like these can be applicable to this transformation. In this way, we can describe this very ambiguous nominal construction *N+no+N* in Japanese.

In case of English, just like in Japanese, categorial rule (9) on p. 94 develops nominal constructions. Comparing this rule with Japanese

categorial rule (13), we find two main differences. That is, the order in which the elements are arranged and the nature of *Det*. The former difference is not so important because, as once suggested, we can change the order if it would be better. However the difference of *Det* is a great problem in English and Japanese. Of course much more analysis of *Det* itself is required but the difference which we should notice is that it is an optional element in Japanese, while it is an obligatory one in English.

Some of the nominal constructions which rule (9) generates need transformational rules. They are, for example, *Relativization Erasure Transformation* (T.4 on p. 99), several nominalization transformations such as *Action Nominalization* (T.7 on p. 105) *Gerundive Nominalization* (T.10 on p. 107), or *Relative Reduction Transformation* (T.14 on p. 110). Most of them are more complicated than Japanese similar operations. For example, English *Relative Erasure Transformation* requires such transformations as T.1 (*wh-Attachment*) T.5 (*Feature Transfer*) before it is applied. In Japanese there are no such conditions. Although it is the same as in Japanese that the dummy symbol functions in *Relative Reduction Transformation* or many nominalizations, each operation is considerably more complicated in English. It is also an interesting problem to compare the operations which make pre-nominal modifications. That is to say, though the operations in English are awfully complicated, the result of the operations is so similar to Japanese that most Japanese students do not feel any difficulty in learning this construction.

In this way we have described most of English and Japanese nominal constructions, contrasting each of their natures. Now let us discuss some residual problems left to be studied in the future.

We introduced two symbols *Nom* and Δ as nominalization markers both in English and Japanese. However, considering the idea of *Complementizer* which Rosenbaum¹ and Hasegawa² develop, it seems to be

¹ P. S. Rosenbaum, "The Grammar of English Predicate Complement Constructions". (unpublished Ph. D. dissertation, M.I.T., 1965).

² K. Hasegawa, "The Passive Construction in English", *Studies in English Literature* (English Number, Tokyo: The English Literature Society of Japan, 1967).

a more powerful treatment. Hasegawa suggests that the construction C (Complimentizer) + $\#S\#$ can be comparable to adverbial clauses whose form is Conjunction + $\#S\#$.¹ This is interesting when we remember Japanese adverbials *Reason* and *Purpose*. As was shown in Chapter II, they are introduced as having the construction $\#S\#$ (Δ). This direction of investigation seems to enable us to clarify many unknown facts. Unified treatment is possible according to this way of study.

We have not considered the selectional problem of many nominalizers. That is to say, the problems like when some nominalizer (*that* for example) should be selected have not been discussed. According to Rosenbaum and Hasegawa, there are selectional restrictions between verbs of Matrix sentences and such nominalizers. Rosenbaum classifies verbs according to which complementizer they take. As for Japanese, this kind of study has not been done at all. Therefore, this remains a very important task in the study of Japanese grammar.

What we have discussed so far is the problem of descriptive adequacy. As a problem of explanatory adequacy, the revision of the nature of the transformational component should be important. Hasegawa's suggestion meeting this requirement should be considered. He proposes that transformations should be an analysable process.² That is to say, most of the transformational rules set up so far can easily be broken down into a few elementary transformations, and some of them are common to several operations. In that case, they should be reorganized in order to make them as general as possible. Our study has somewhat followed this direction. For example, such English transformational rules as T.2 or T.8 are such. However, erasure transformation which is set up only for relativization should be more general as Hasegawa's.

It can be revised in order to meet the condition of, for example, passivization. *Wh*-attachment transformation T.1 and T.6 should be revised also. In this way, transformations specific to particular constructions should be reduced as much as possible. Furthermore, Hase-

¹ *Ibid.*, p. 98.

² *Ibid.*, p. 100.

gawa writes about transformational component as follows:

... it seems to me possible to impose two tentative conditions on the kind of operation a transformation may perform:

- 1) adjunction of a new formative (to some term of the structure index) should be avoided, unless it is a completely automatic increment that does not have morphemic status (e.g. *do*, which is introduced as the 'bearer' of an unaffixed tense morpheme)
- 2) an optional transformation consists of one elementary operation (namely, a substitution of one term of the structure index for another or a deletion of one term of the structure index, subject to recoverability condition), sometimes accompanied with deletion of # for the purpose of filtering.¹

Although these may be working principles rather than definite constraints on the general theory, as he says, we must pay attention to them in future study.

When we return to our subject, contrastive study of English and Japanese, we know that we should continue the investigation following the assumption presented by Fries and Lado. In doing so, a close study of linguistic theory itself and the neat descriptions of both languages based on that theory are necessary. The residual problems of this study will be analysed in this way and it will enable us to compare the two languages more precisely on each level of description.

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¹ *Ibid.*, pp. 110-11.

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