



Title	Some Remarks on It
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Citation	北海道大學文學部紀要, 21(1), 174-153
Issue Date	1973-02-20
Doc URL	http://hdl.handle.net/2115/33376
Type	bulletin (article)
File Information	21(1)_PL174-153.pdf



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SOME REMARKS ON *IT*

Seizo KASAI

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“Pronouns are indeed funny little words”

Jacobs & Rosenbaum, *Transformation, Style and Meaning*.

0. Pronouns, which used to be of no great importance, are now a general topic to transformational generative grammarians. ‘it’ is no exception. In this paper the writer mainly argues

- (1) that ‘it’ is used in several different senses without much specification and this will entail an unnecessary confusion in the study of this field,
- (2) that in ‘it’ pronominalization, too much stress is put on the explanation for explanation’s sake, without turning frankly to the simple linguistic fact for its verification, and
- (3) that ‘it’ pronominalization is impossible without some means to formulate how prominent ‘the thing in question, the person in question’ is in the speaker’s mind in the course of explanation.

1. The *C. O. D.* defines ‘it’ as ‘the thing in question; the person in question...’ giving many examples of each of different characters. The *O. E. D.* goes further in its detail in the definition of the word, giving five major (fourteen minor) categories with a few examples of each. Among these definitions one goes “*it* may refer not to anything or person mentioned, but to a matter expressed, or occupying the attention of the speaker” and another one says “*it* refers to the subject of thought, attention, or inquiry, *whether impersonal or personal*, (italics added).”

For the convenience of clarity the writer groups these examples into three classes according to the ways they are used.

I. what is referred to is obvious because they are shown verbally on the surface.

ex. I tried to rise, but I found it impossible.

II a. what is referred to is obvious, though not shown verbally,
ex. "Mother!"

"What is it?"

(In this case, "Mother!" is uttered with some hope or object in mind, so "What is it?" can be paraphrased, "What is it that you want?")

II b. what is referred to is not shown verbally and is not so obvious as in II a, but imaginable from the situation where it is uttered.

ex. That's it.

III. all other examples which refer to weather, temperature etc., including idiomatic ones such as 'to lord it, to walk it' etc.

(It may be difficult to some extent to draw a clear-cut line between IIa and IIb in some cases. But the writer believes that there is a recognizable, though slight, difference in clarity and idiomatic use between these two. But the writer will not elaborate this because it is not relevant to our problem to discuss here.)

This classification may prove to be far from being satisfactory when we try to put into the above three classes all the examples we come across. This is one of the proofs which shows the fact that 'it' can refer to many different levels of things in actual speech. The writer's study shows that most of the examples of the use of 'it' picked out of the novels he read go into I and II classes and those out of the essays into I class. This result is natural to some extent, because dialogues which usually occupy a great part in novels depend on the situation where the dialogues are going on.

Here we can say roughly that the examples given in both novels and essays show that the definition of 'it' in the *C. O. D.* and the *O. E. D.* is quite tenable.

2. Among many difficult problems we face in the study of transformational generative grammar (henceforth T. G. grammar), is

that of pronominalization. 'it' as the result of pronominalization contains various problematical points which should be considered on some separate levels. This paper aims at a critical study of some aspects of 'it' in T. G. grammar.

When we study the examples of 'it' pronominalization in T. G. grammar, we find that all of them belong to I class of a very limited range of one independent sentence.

This is the natural result of T. G. grammar, because T. G. grammar is, so to speak, sentence-centered,⁽¹⁾ and limits its study within the bound of an independent sentence. But the sentences containing 'it' of II class which refers very often to the item outside of the sentence are quite numerous in the practical use of English. It is clear from this that the examples of IIa, b classes, which outnumber those of I class, raise far more difficult problems than those of I class. So, it is often pointed out critically that T. G. grammar deals with too narrow a scope of pronouns.

3. Firstly, we must point out the fact that 'it' is used in many different ways without indentifying its character. One of the ambiguous uses of 'it' is seen in Jacob & Rosenbaum.⁽²⁾ They, giving 'he,' 'she,' 'it' and 'they,' clarify the features contained in each of these pronouns.

$\left(\begin{array}{c} \text{he} \\ \langle + N \quad \rangle \\ \langle + \text{pro} \quad \rangle \\ \langle + \text{III} \quad \rangle \\ \langle + \text{masculine} \rangle \\ \langle + \text{singular} \rangle \end{array} \right)$	$\left(\begin{array}{c} \text{she} \\ \langle + N \quad \rangle \\ \langle + \text{pro} \quad \rangle \\ \langle + \text{III} \quad \rangle \\ \langle + \text{feminine} \rangle \\ \langle + \text{singular} \rangle \end{array} \right)$	$\left(\begin{array}{c} \text{it} \\ \langle + N \quad \rangle \\ \langle + \text{pro} \quad \rangle \\ \langle + \text{III} \quad \rangle \\ \langle - \text{masculine} \rangle \\ \langle - \text{feminine} \rangle \\ \langle + \text{singular} \rangle \end{array} \right)$	$\left(\begin{array}{c} \text{they} \\ \langle + N \quad \rangle \\ \langle + \text{pro} \quad \rangle \\ \langle + \text{III} \quad \rangle \\ \langle - \text{singular} \rangle \end{array} \right)$
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Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 3 is the matrix of the features given to 'it'. So far as it is taken as such isolated from the context in which it is used, it does not raise any problem.

But when we look at this matrix from another viewpoint, we

find that this 'it' has no practical significance, because the features given to 'it' are distinctive only when we compare these features with those of other pronouns, 'he', 'she', and 'they'.

<III> stands for the feature of 'the third person', <I>, <II> for 'the first person', 'the second person' respectively. But no further explanation is given as to why the number of the features given to 'it' is six. These features are only the ones enough to distinguish one pronoun from another. Analizability into distinctive features never means that a simple sum of features makes the whole. Can't the number be more than six or less? In its practical use, it refers to some thing or some person in question as the *N. E. D.* says that 'it' can refer to 'the subject of thought, attention, or inquiry, whether impersonal, or personal', and there is no problem about this. These features given here for the mere purpose of distinguishing 'it' from 'he', 'she' and 'they' prove to be quite inadequate to explain 'it' in

"Who is it (that knocks)?"

"*It* (the person that knocks) is I."

This is the very sentence given as an example of 'the person in question' in the *C. O. D.* This 'it' refers to a human being, but no 'human' feature is given in Jacobs & Rosenbaum's 'it' matrix. 'it' as the combination of several features cannot (at least in T. G. grammar) be a mere abstract item in utterance. Their 'it' matrix is quite abstract, and has not any positive *raison d'être* as the specification of 'it'. The matrix for 'it' should be a little more elaborate.

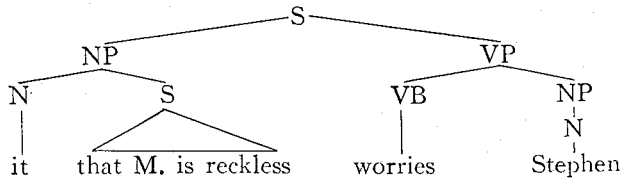
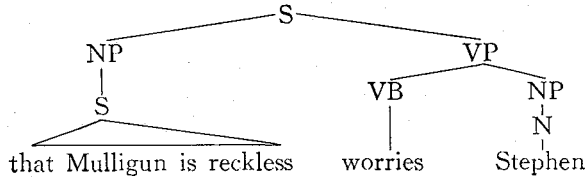
4. The second problem to be considered is again Jacob & Rosenbaum's.⁽³⁾ The following sentence, which contains a 'noun phrase complement',

The claim *that the world was round* was made by Columbus, can be, in their opinion, transformed into

The claim was made by Columbus *that the world was round.*
In the same way, a sentence of the structure shown below has,

according to their opinion, the following deep structure with 'it' newly introduced.

That Mulligun is reckless worries Stephen.



What is this 'it'? It does seem that 'it' works just like 'the claim' in the sentence given above,⁽⁴⁾ but why 'it'? Is there any acceptable reason why that must be 'it'? Is there any positive relation between two lexical items 'the claim' and 'it'? Can that not be some other word? Why does this 'it' have to be introduced after all? Some structural similarity does seem to exist between these, but does it make any positive reason for introducing 'it'?

Some grammarians comment on the character of this type of 'it'. Take Jacob & Rosenbaum for instance.⁽⁵⁾ They give the following sentence,

I dislike it that you change the regulation without notice, and explain this, saying "This *it* is not the ordinary pronoun *it*, which must refer to a specific non-human thing. This *it* refers not to a single object but to the meaning of the whole complement sentences, just as the abstract nouns *impression*, *fact*, *stories* did," but this explanation won't solve at all the question we have posed. They only propose our question in a different way.

Another comment is seen in Elizabeth's.⁽⁶⁾ She, giving the following sentences,

2.198 It is significant that he likes Bruce,

2.199 I resent it that he is always drunk,

2.200 It is true that he ran away,

2.201 I believed that he liked her,

says, "Sentences 2.198 and 2.199 contain 'factive' complements. This means that the proposition of the embedded sentence is assumed to be true." And after rewriting 2.198 and 2.200 into 2.206 and 2.207 respectively,

2.206 The fact that he likes Bruce is significant,

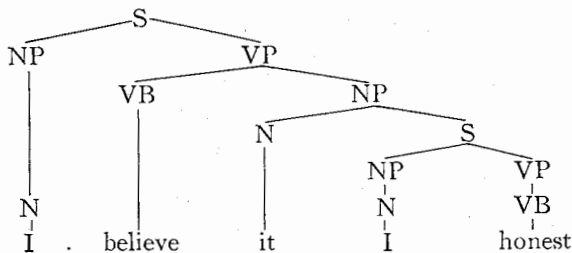
2.207 The fact that he ran away is true,

she clarifies the difference, saying "This suggests that *it* in 2.198 is a true subject, while in 2.200 *it* is only a meaningless place holder or 'pseudo-subject' ..."

This surely is a very interesting and enlightening comment on two different types of 'it', but this does not explain either why 'it' (not other words) must be used in both cases.⁽⁷⁾

This ambiguous character of 'it' is also seen in another example of the deep structure tree which underlies the sentence,

I believe myself to be honest.



Why is it possible to put 'it,' which is supposed to be the result of pronominalization, in the deep structure? This is quite unreasonable.

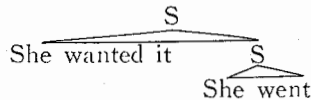
Suppose that 'it' is meant to be different from the one produced by pronominalization, then this 'it' must be given a further specification as such.

This type of 'it' is the very example which McCawley⁽⁸⁾ discusses critically. He says "it failed to provide explanation of why *it* and not something else (perhaps *that* or *something*) should appear in extraposed sentence. Since *it* is what results from the pronominalization of a sentence."

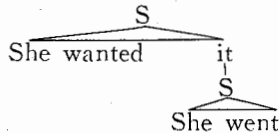
5. From what we have argued so far it is quite clear that there are several types of 'it' used with some overlapping among them; true subject, a meaningless place holder or "pseudo-subject," or an empty 'it' which can be replaced by "the fact," "the claim" etc., 'it' which might be better replaced by "something" or "that" and so forth. And besides it is not tenable to put 'it' (which is to appear as such on the surface structure after 'it' pronominalization) in the deep structure without any specification of the reason for 'it' introduction. It causes nothing but confusion to introduce 'it' of this type without any elaborate explanation.

6. The deep structure most of the T. G. grammarians give to the sentence,

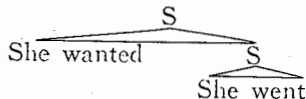
She wanted to go,
will be,



or



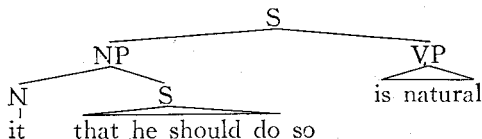
From what we have discussed, however, one of the most plausible ways out of our confusion will be not to use 'it' in the deep structure as is seen in the following tree.



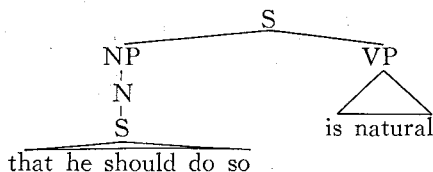
As to 'it' in the following sentence, another explanation is possible.

It is natural that he should do so.

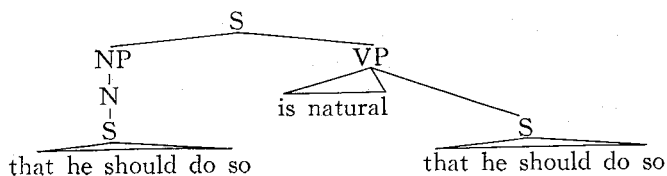
This sentence is usually given the next tree,



But, in order to avoid our confusion above, the tree to be given must be as follows:



then we copy S on the right side,



and then conduct 'it' pronominalization between S's to change S on the left into 'it.'

7. Another way the writer has found acceptable so far is in W.P. Lehman's.⁽⁹⁾ He says that the sentence,

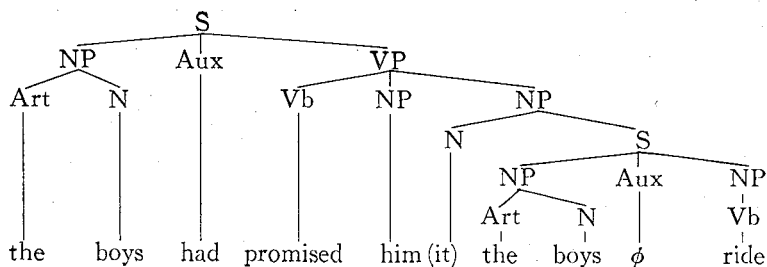
The boys had promised him to ride,

comes from the two sentences,

(The boys) ride.

The boys had promised him (something/it)

And the deep structure he gives to this sentence is as follow:



Note the parentheses given to 'it'. Even this simple device of putting parentheses helps to specify the character of 'it' and to prevent our confusion, though not satisfactorily.

To go too far into the mere classification of the phrases and the clauses which our pronoun 'it' can refer to, is not of much use. What we want in our research is not an ad hoc explanation but an explanation well based on *consistent* generalization, both simple and exhaustive.

8. Our next discussion concerns 'it' as the result of pronominalization. In the sentence,

Liza had not had time to put her hat on, and was holding it in her hand,

'it' refers to 'her hat'. It is a well-known fact that 'it' can refer not only to a single noun word, but also to many other noun equivalents, depending on the context, as in,

I tried to rise, but found it impossible.

He is an honest man, and I know it well.

In the former, 'it' refers to 'to rise', and 'He is an honest man' in the latter. Only a few examples like these are enough to show 'it' can refer to anything 'occupying the attention of the speaker.' A speaker refers as 'it' to anything or any person that comes into his mind as something or someone 'in question', whether shown verbally on the surface or not. So, when we come across a sentence which begins first with 'It is ...' we can *rightly* expect certain expressions to follow which suggest 'the thing or the person in

question', or expression about weather, temperature, date or 'that clause,' 'to infinitive clause,' etc. That is, from a hearer's viewpoint, what 'it' refers to in this case can be fully understood only after the sentence containing 'it' is completed. So, however far we may go into the detail of 'it' itself, we cannot specify the 'it' satisfactorily so far as the 'it' is taken up as a mere item isolated from its context, as is typically seen in the 'it' matrix above by Jacobs & Rosenbaum.

9. Lakoff⁽¹⁰⁾ says in his paper that we must take special care in pronominalization and take into consideration the following points,

- identity of lexical items
- identity of reference
- identity of derived structure
- identity of deep structure.

His assertion is quite right, especially as to the identity of deep structure and the identity of reference, as is quite clear from what we have discussed above. Note, however, that this is only the approximation. As with the case of analysis of an item into features, so it is with identity. The further we go on with our analysis of an item concerned into features, the better we can know of what elements or factors the item in question is composed and how. But this analysis is likely to make us forgetful of (or less attentive to) the whole. In the dialogue,

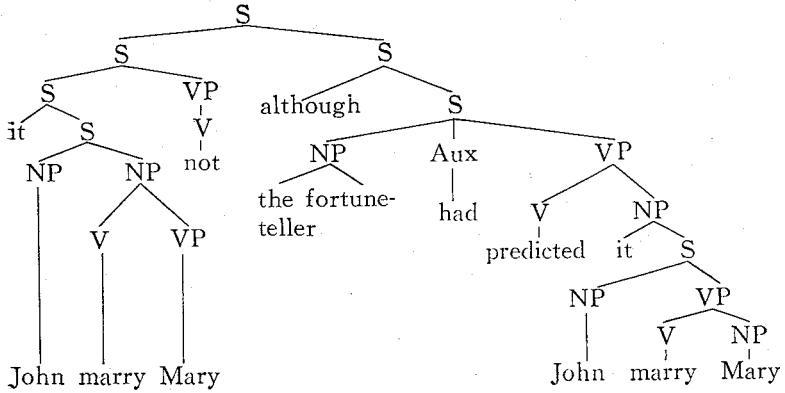
"Have you ever read the book (in question)?"

"No, I haven't read it yet."

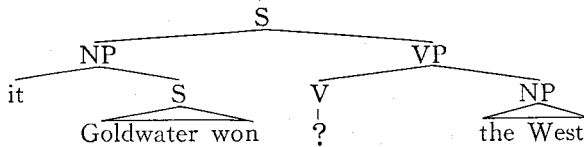
it is not necessary that 'it' refers to the very book which someone has put on a certain desk. It can be some one copy of the book.⁽¹¹⁾ As seen in the example above, here again we can say that the simple sum of features never makes the whole. (Analysis does not always mean a solution.) The crucial point now is whether or not we can refer to the object concerned as 'the thing or the person in question' as a *whole* which is distinguished from others in the speaker's mind.

10. Lakoff argues further elsewhere,⁽¹²⁾ giving the following sentences and the respective trees,

John didn't marry, although the fortuneteller predicted it,
 Goldwater won in the West, but it didn't happen in the East.



He says that 'it' in the former refers to 'John would marry Mary' and 'it' in the latter refers to 'Goldwater's winning,' adding that this shows that a negative element and a locative stand outside S, that is, an anaphoric 'it' refers only to a single constituent (presumably an S) as is seen in the revised tree (with an unnecessary part omitted),



And he comments "that '?' would have a meaning something like

'took place in' or 'was located in' and would be deleted by some as yet unknown rule." And he reaches the conclusion that deep structures are somewhat more abstract, further removed from surface structure, than had previously been thought.

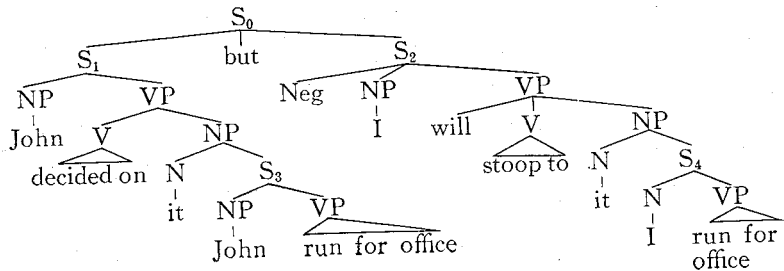
His explanation so far does seem to be plausible to a certain extent, but, the question of 'it' of these trees aside (because we have already discussed), his comment and the conclusion therefrom are a little too rash. In the latter sentence, 'in the West' stands in contrast with 'in the East.' That is why 'it' refers not to 'Goldwater won in the West' but to 'Goldwater's winning.' In the following revised sentence,

Goldwater won in the West, and I thought it wonderful, 'it' can refer not only to 'Goldwater's winning' but also to 'Goldwater's winning in the West.' What 'it' refers to must be considered not as 'it' alone in the given sentence, but in comparison with some other context to specify the difference. This may have some connection with the use of the conjunction, that is, what is presupposed in this case.

11. What is mentioned above also applies to the sentence given below, which contains a problem as to the way 'it' is used, as well as what transformation in T.G. grammar should be.

Lakoff⁽¹³⁾ gives a sentence and its deep structure.

John decided to run for office, but I will not stoop to it.



The deep structure given here seems to be a correct one. We have already discussed 'it' of this kind, so our next question is about the

process of the transformation conducted here. Transformation is normally conducted, to use this example, from S_3 to S_1 , and from S_4 to S_2 cyclically, then finally on to S_0 .

If transformation is carried out this way, we cannot produce 'I will not stoop to it.' The reason is that, as S_4 (I-run for office) is not identical with S_3 (John-run for office), there is no pronominalizing S_4 (I-run for office) into 'it.' To realize this pronominalization properly, Lakoff proposes to apply two new operations,

Equi-NP-deletion

S-deletion.

By Equi-NP-deletion is meant the deletion of 'John' in S_3 , which is identical with 'John' in NP directly dominated by S_1 , and the same with 'I' in the right branch. With both 'John' in S_3 and 'I' in S_4 deleted this way, it is now possible to delete S_4 , that is, to pronominalize S_4 , because VP's (run for office) in S_3 and S_4 are identical now. There seems to be no mistake about this as an explanation goes, but this is too artificial and is far from being acceptable.

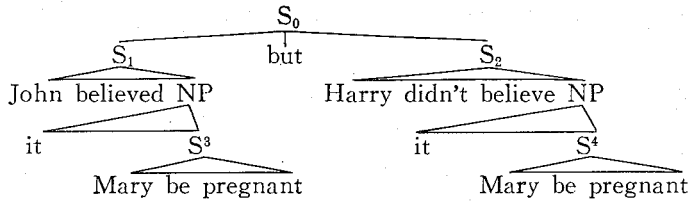
The reason why this explanation cannot be accepted is that, in our sentence,

John decided to run for office, but I will not stoop to it,
it is quite clear that what 'it' refers to is nothing but someone's running for office. So, in this case such an explanation is enough that says that 'run for office' is considered as 'the thing in question.' That is, the explanation about the transformation should naturally be the one which reflects this simple fact. Any explanation which ignores this simple fact which is clear to anyone may well be rejected as an empty one.

12. We will discuss another example in relation to this. Lakoff⁽¹⁴⁾ says that the sentence,

Mary was believed by John to be pregnant, but Harry didn't believe it,

has the tree shown below as its deep structure.



If we conduct our transformation cyclically on S_3 first, then on S_1 , we get the sentence,

John believed Mary to be pregnant.

The passive transformation on this transform provides

Mary was believed by John to be pregnant.

As is seen here S_3 (Mary be pregnant) loses its original form after this transformation. Now, theoretically, we cannot pronominalize S_4 , because S_4 (Mary be pregnant) has not any more the sentence identical with S_3 which has already been transformed into another form. This shows that the only way to get out of this difficulty and to produce the sentence,

John believed Mary to be pregnant, but Harry didn't believe it, is to conduct the pronominalization transformation between S_3 and S_4 first prior to any other transformations. This is why the transformation is called 'precycle' transformation. Lakoff adds here a lengthy explanation as to why he has to introduce this 'precycle' transformation, saying that, what he is aiming at is a hypothesis to account for competence, not at the description of what is actually going on in the speaker's mind. When he says, "We are not maintaining that the mind goes through the operation of a transformational cycle" and "Our claim is not that the process of indexing as we have described it goes on in the mind," he is quite right because indexing is only an artificial device of explanation and we cannot cut open our brain and see what is going on in the mind while speaking.

But in our example, it is evident that 'it' refers to 'Mary be pregnant' as 'the thing in question' and this is sufficient for us to

conduct 'it' pronominalization transformation. What we need is a rule which reflects this. Put in another way, it is empirically quite clear that, so long as 'Mary be pregnant' can be referred to as 'the thing in question,' we can conduct our pronominalization transformation whether or not 'Mary be pregnant' is deleted for some reason in the process of transformation at any stage of its derivation from the deep structure to the surface structure. This is the 'natural' way we use language. As is clear from the series of explanations which do not reflect simple facts of language, it seems to be not of much concern for Lakoff to care much whether his hypothesis which is usually set forth for the discovery of the truth of language is a valid one or not. For him a hypothesis is not 'supposition made as basis for reasoning ... or as starting point for investigation' (*C. O. D.*) but an excuse, in the end, for wandering into an empty explanation through the wrong use of it. Here again he has put too much stress on the explanation for explanation's sake without turning frankly to our simple language activity as such.

13. The study of language, just like that of any other field of science, requires some kind of abstraction in the course of study. But this never means that our hypothesis can be put forth independently of performance (the actual use of language in concrete situation),⁽¹⁶⁾ which is the important material possible for the language study. Every hypothesis must be ready to be subject to constant modification through the repeated application to the given data for its verification.

It is important in 'it' pronominalization to note that, any element can be pronominalized as 'it' so far as it is identical with other element (s) of the sentence in the deep structure *whether or not it is deleted in the process of transformation*. (As to the way of referring, there may be some differences among individuals, that is, some people may refer to a dog as 'it,' and some as 'he' or 'she').

Here is another fact which supports the writer's opinion as to the necessity of 'naturalness' to be taken into account in pronom-

inalization transformation. The following often-quoted sentences,⁽¹⁶⁾

His portrait doesn't do the old man justice,
 It was his accent that betrayed Gustav,
 Near him John discovered a wasp's nest,
 John still refuses to speak to her, although

Mary has admitted that she was at fault,

will show clearly that pronominalization is not a simple transformation to be conducted one-dimensionally. Pronouns appear not only in a subordinate clause, but also in a principal clause, even if we limit our study to an independent sentence. So, the opinion is far from being plausible which says that the noun in the subordinate clause can be pronominalized, or that the identical noun of second occurrence can be pronominalized whether or not it appears in the subordinate clause. On the ground of this some may reject the existence of deep structure and say that 'it' cannot be introduced transformationally, or that there is not any particular rule in pronominalization transformation. But this is a little too hasty a conclusion, because there *are* many cases in which 'it' can be introduced transformationally and 'it' in question does seem to be different from other lexical items in that 'it' can refer, as we have seen, to any thing of any level of abstraction, occupying our attention.

It is a simple psychological fact that the human mind never works with leveled prominence or tension, but always shows a wavy rise-then-fall curve in tension. So, psychologically it is quite improbable that, in our utterance, only words of semantic importance or psychological prominence appear one after another without any words of less prominence inserted between. We speak, in most cases, as we construct our sentence, following a sentence pattern. And in the course of construction, we have to put somewhere, 'the thing or the person' most prominent in our consciousness. Some people may put it at the beginning of the sentence, some may at the middle, and some at the end of the sentence, as their favorite sentence pattern requires. Then it is possible now to pronominalize the other

identical element(s) at any other place in the sentence, wherever it is (presumably most often when it is at the lower part of the 'wave' of tension) whether in a subordinate clause or not. If the speaker considers it more effective to keep 'the thing or the person' till the end of his utterance, he will probably start his sentence with a pronoun, 'It ...', 'She ...,' or 'He ...'.

Of course, this doesn't solve all, but there is no denying that language is a psychological fact and naturally it is conditioned psychologically. We can say now that another important point in pronominalization is to accept the psychological fact of speech as it is and then find some means to arrange this as the constraint on surface, and finally formulate it as a general statement of language. The traditional one-dimensional view can never solve this pronominalization problem.⁽¹⁷⁾

14. What we look for in linguistics (science of la language) is the linguistic truth, or a general statement of it.⁽¹⁸⁾ The *C. O. D.* defines 'true' as 'in accordance with fact of *reality*,' and 'real' as 'Actually existing as a thing or *occurring in fact, ... natural, not artificial*' (italics added). We want not an explanation for explanation's sake, nor a hypothesis for hypothesis' sake which does not reflect our language activity. Any explanation or hypothesis, so long as it is put forth in isolation from our actual speech act (performance), is very likely to remain empty and artificial. It is true so far that we have not any means to know what is 'occurring in fact' in the brain, but we can come closer to what is 'natural, not artificial' by looking frankly into our own speech act.

15. T. G. grammarians often refer to their 'linguistic intuition' in their study. Chomsky goes so far as to say that linguistics is simply the subfield of psychology,⁽¹⁹⁾ adding that the transformational operations relating deep and surface structure are actual mental operations, performed by the mind when a sentence is produced or understood.⁽²⁰⁾ But then why don't they turn frankly to their 'intuition' and performance when they are groping the way of

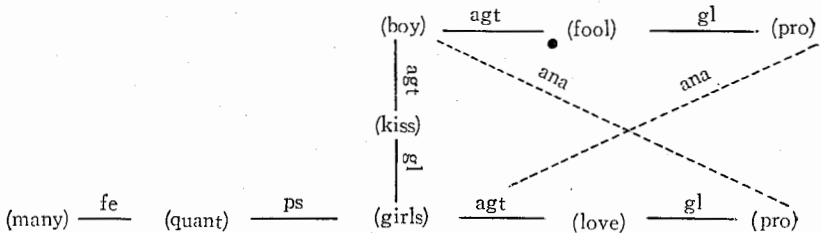
a better hypothesis toward the truth of language? Do they really, by any possibility, think that their operations such as 'precyclic rule' are 'natural, not artificial' and consistent with their 'intuition' and 'actual mental operations'? Any theory which neglects linguistic facts of performance, however small, can never be on the right track toward the truth.

It seems that in 'it' pronominalization transformation too T. G. grammarians (especially Lakoff among 'Generative Semantics' followers) have gone too far in too abstract and artificial an explanation as it happens very often in linguistics which follows the deductive method.

NOTES AND REFERENCES

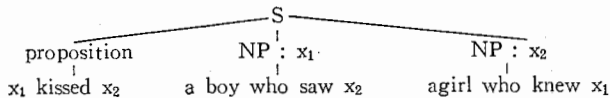
- (1) Alsdair Macintyre, "Noam Chomsky's view of language"
Reading in Applied Transformational Grammar M. Lester (ed.) (Holt, Rinehart and Winston 1970)
- (2) *English Transformational Grammar* (Blaisdell Pub. Company 1968)
p. 97
- (3) *ibid.* p. 173
- (4) See note (7)
- (5) *Transformation, Style, and Meaning* (XEROX 1971) p. 10
- (6) Elizabeth Blott Tranggott,
A History of English Syntax (Holt, Rinehart and Winston 1972) pp. 59, 60
- (7) A similar view is held by Rogen Fowler.
An Introduction to Transformational Syntax (Poutledge & Kegan 1971)
p. 134
"The *NP* to which a nominalized *S* is attached must be *it*, or one of a small set of formulaic *NPs* such as the *idea, the fact, the claim, the way* etc. Unlike the *NPs* to which relative clauses are attached, these are semantically empty and may readily be deleted."
- (8) "Where do noun phrases come from?"
Readings in Transformational Grammar Jacobs & Rosenbaum (eds.) (Ginn and Company 1970) p. 179
- (9) *Descriptive Linguistics, An Introduction* (Randomhouse 1972) p. 134
- (10) *Deep and Surface Grammar* (Reproduced by the Indiana University Linguistics Club 1968) p. 65

- (11) See McCawley "The Role of Semantics in a Grammar"
Universals of Language E. Bach and R. T. Harms (eds.) (Holt, Rinehart
 and Winston 1968) p. 138
 "I will use *refer* in connection with the 'intended referent' of a noun
 phrase rather than its 'actual referent,' that is, indices will correspond to
 items in the speaker's mental picture of the universe rather than to real
 things in the universe."
 (12) "Pronominalization, Negation, and the Analysis of Adverbs"
Readings in Transformational Grammar (op. cit.) pp. 152-158
 (13) *Deep and Surface Grammar (op. cit.)* pp. 74-82
 (14) *ibid.* p. 40
 (15) *Aspects of the Theory of Syntax* (The M. I. T. 1965) p. 4
 (16) Terence D. Langendoen, *Essentials of English Grammar* (Holt, Rinehart
 and Winston 1970) p. 118
 (17) W. J. Huchins proposes the following two-dimensional notation as a
 solution of the problem of our 'it' pronominalization.
 A boy who was fooling them kissed many girls who loved him.



For further details, see his "Semantics in three Formal Models of Language"
Lingua 28, 1971 Here may be added McCawley's notation in "Where do
 noun phrases come from?" (*op. cit.*) He gives the sentence the tree
 shown below.

A boy who saw her kissed a girl who know him.



And this sentence is derived through the combination of two sentences,

A boy who saw x_2 kissed x_2 ,

x_1 kissed a girl who knew x_1 ,

embedding the one into the other to produce,

A boy who saw a girl who knew x_1 (him) kissed x_2 (her).

- (18) Webster defines 'science' as 'a branch of study which is concerned with observation and classification of facts, esp, with the establishment ... of verifiable general chiefly by induction and hypothesis.'
- (19) *Language and Mind* (Harcourt, Brace & World, Inc. 1968) p, 24
- (20) *ibid.* p. 16