III. A NOTE ON NEGATION

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We will consider three diverse and somewhat puzzling phenomena involving negation in English and propose that they can all be accounted for by the postulation of an "it is not so that ..." sentence as the source of the negative element involved.

Consider the sentences

1.   Someone can't lift 500 pounds.

2.   No one can lift 500 pounds.

In (Klima, 1964), Klima suggests that (2) be derived from the structure underlying (1). In the theories of grammar proposed in (Katz and Postal, 1964) and in (Chomsky, 1965), such a derivation would be impossible, since it is proposed in those theories that two sentences can be derived from the same underlying structure only if they are paraphrases. (1) and (2) are not paraphrases. We assume that the theories of (Katz and Postal, 1964) and (Chomsky, 1965) are correct in this point, and we must therefore seek a solution in another direction.

In symbolic logic, the difference between (1) and (2) would be expressed in the following way:

Suppose L = can lift 500 pounds

1. can be expressed as: $(\exists x) \sim L$

2. can be expressed as: $\sim (\exists x) L$

We would like to suggest that the proper grammatical analyses of these sentences are roughly similar to the corresponding logical analyses. We are in no position to propose resolutely a solution to all problems of this sort; rather we would like to indicate the direction in which we think the solution lies.

Consider the sentence:

3. It is not so that someone can lift 500 pounds.

(3) is a paraphrase of (2). Let us consider the possibility of deriving (2) from the structure underlying (3).[1]

Since "so" seems to function like "true", we will assume for the sake of exposition that it is an adjective. This assumption would explain the presence of "be". If, moreover, "so" were analyzed as a STATIVE adjective we could account naturally for the non-occurrence of "*It is being so" and so on. However, since nothing further that we have to say hinges on this point, we will not press the matter here.

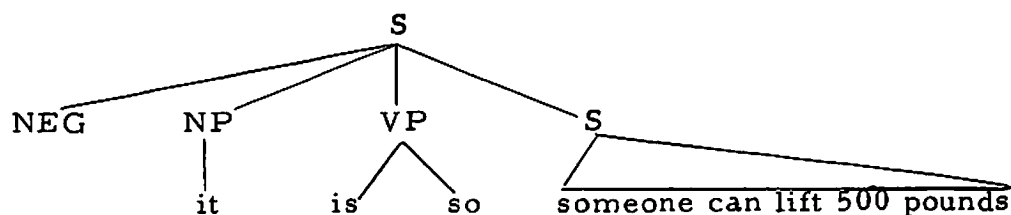The structure underlying (3) is roughly as follows:

4.

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                        S
           _____/|_____
         /             |            \
       NEG            NP            VP
                     /  \          /  \
                   it    S       is    so
                        / \
                       /   \
                      /_____\
              someone can lift 500 pounds
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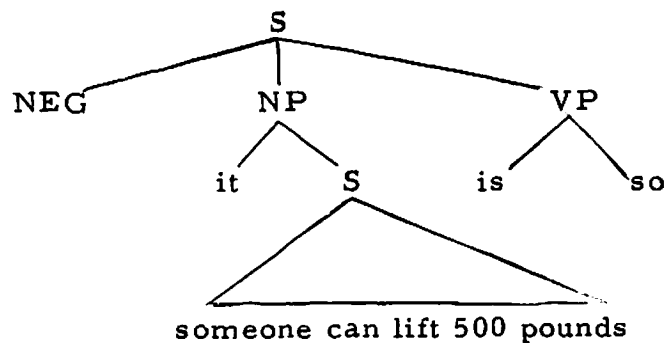
[1] It was suggested to me by Paul Postal that "so" is the proper predicate in (3).

After extraposition of the embedded _S, we get:

5.

We would now now need a rule (or sequence of rules) to delete "it is so". As it happens, such a sequence of rules is needed independently of how we derive sentence (2). Consider the following examples:

6.   Is John in the room?

    a. I think so.

    b. If so, take three giant steps.

(6a) and (6b) are paraphrases of (7a) and (7b) and would be derived from them by the deletion of "it is" before "so".

7.   a. I think it is so.

    b. If it is so, take three giant steps.[2]

Now consider (8).

8.   Is John in the room?

    a. I think not.

    b. If not, take three giant steps.

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[2] If one were to consider discourse phenomena, one might well want to derive (7a) and (7b) from:

    7'.   a. I think it is so that John is in the room.

   b. If it is so that John is in the room, take three giant steps.

In these sentences the declarative corresponding to the question of (6) occurs embedded as a sential complement of the subject of "so". But such matters are beyond the scope of this paper.

(8a) and (8b) are paraphrases of (9a) and (9b) and could be derived from them by the above rule which deletes "it is" and a successive rule which deletes "so" when it follows NEG.

9. a. I think it is not so.
    b. If it is not so, take three giant steps.[3]

These examples show that there is independent motivation for assuming the existence of a sequence of rules which has the effect of deleting "it is so" following an occurrence of NEG.[4] If these rules were to apply to the structure in (5), the result would be (10).

10.

someone can lift 500 pounds.
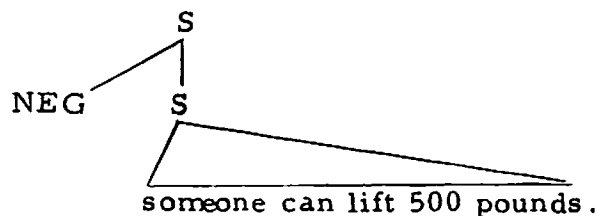
In (10), "someone" <u>follows</u> NEG and so is subject to the ordinary rule that converts "some" to "any" (Klima, 1964, p. 280, (110a)) rather than Klima's special rule to account for the derivation of (2) from (1) (loc. cit., (110b)). At this point, NEG would directly precede "any" and so would be subject to Klima's ordinary rule for the conversion of "NEG any" into "no" (loc. cit., (113a)), and Klima's special rule to move NEG into the proper position in this case (loc. cit., (112b)) would be unncessary. Thus, we can not only derive (2) from the structure underlying (3) by independently motivated rules, but we can eliminate two of Klima's rules ((110b) and (112b)) in the process.

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[3] The comments made in footnote 2 are relevant here.

[4] The exact specification of these rules is beyond the scope of this paper. It is clear that some such rules must exist, and we assume that they can be generalized to subsume all of the cases we discuss.

. A similar case has been brought to my attention by Stanley Peters.

Consider the sentences:

    11. John neither likes Bill nor admires Harry.

    12. Either John doesn't like Bill or John doesn't admire Harry.

(11) cannot be derived from the structure underlying (12) since (11) and (12) are not paraphrases. In symbolic logic the difference between (11) and (12) would be expressed as follows:

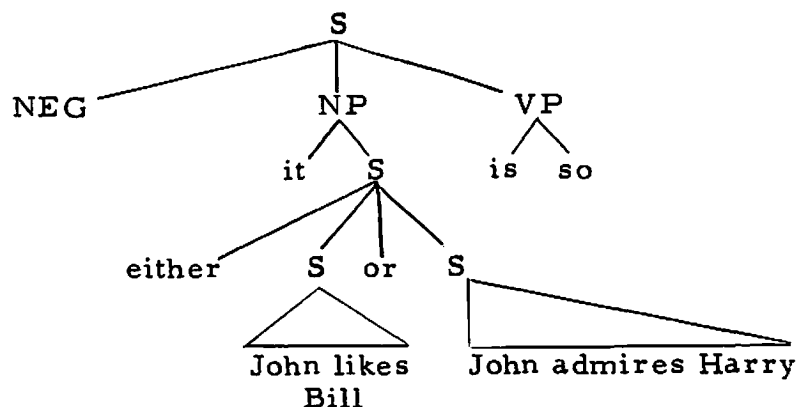Suppose L = John likes Bill and A = John admires Harry

    (11) can be expressed as: $\sim(L \vee A)$
   (12) can be expressed as: $(\sim L \vee \sim A)$

Again it seems that the proper grammatical analysis follows the logical analysis. Observe that (11) is a paraphrase of (13).

    13. It is not so that either John likes Bill or John admires Harry.
    (13) would have the underlying structure of (14).

14.

By the successive application of extraposition, the rule deleting "it is" before "so", and the rule deleting "so" after NEG, we would get:

15.
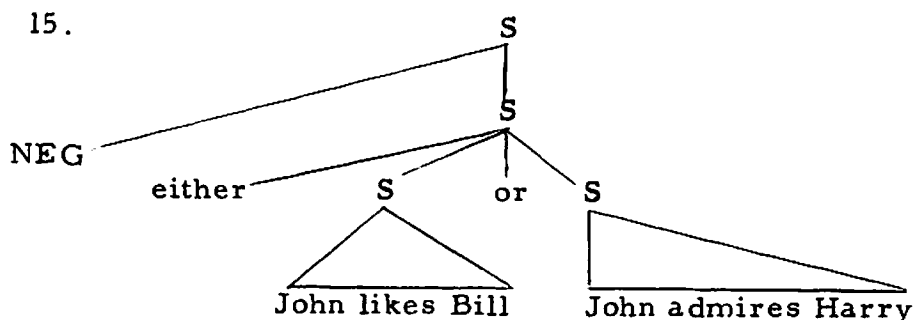
A further rule would then be needed to attach a copy of NEG to "or" to produce "nor". Sentences like (16) provide further evidence that the NEG associated with "nor" could not have come from within the $\underline{S}$ associated with "nor", since that $\underline{S}$ would then have to have two occurrences of NEG.

16. John neither likes eggs nor doesn't like eggs.

This fact also shows that it is impossible to derive neither-nor constructions by means of a rule which would be the syntactic equivalent of one of DeMorgan's Laws. Such a rule would derive (17) from (18).

17. John neither likes Harry nor admires Bill.

18. John doesn't like Harry and John doesn't admire Bill.

But such a derivation for (16) would have to assume an underlying sentence with two occurrences of NEG, something like (19).

19. *John doesn't not like eggs and John doesn't like eggs.

Such a source does not occur. This is a case in which grammar does not parallel logic.

. In (Lakoff, 1965, Appendix F), it was proposed that many adverbs are introduced as predicates of 'higher' sentences. One of the facts that this proposal was to account for was that in sentences with both a negative element and one of the adverbs in question, the adverb, not the main verb, is negated. Thus the sentence

20. John didn't shoot Bill in the yard.

has one reading in which it is presupposed that John did shoot Bill, but it is denied that he did so in the yard. To account for this reading we assumed the underlying structure of (21).

21.
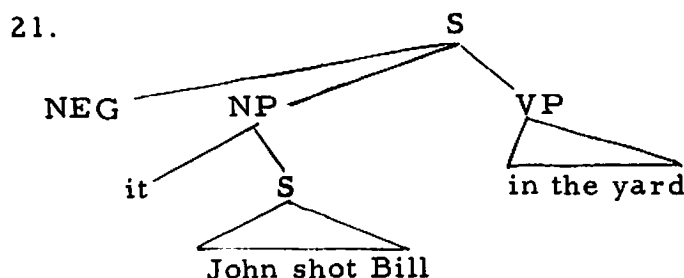
For details see (Lakoff, 1965, p. F-15).

However there is another reading of (20) which is simply a denial of the statement "John shot Bill in the yard" and does not presuppose that John shot Bill. This reading is not accounted for in (Lakoff, 1965). Note that this reading is synonymous with (22)

22. It is not so that John shot Bill in the yard.

(22) would have the underlying structure of (23).

23.

After extraposition, the deletion of "it is", and the deletion of "so", the structure of (25) would result.

24.

thus, both (24) and (21) will result in (20). The same argument can be applied in other cases of this sort.

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