

ON PRONOMINALIZATION AND  
SEMANTIC TREATMENT OF SENTENCES

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I. Facts

There is an interesting group of facts connected with pronominalization that, when accordingly interpreted, point to the need for modifying the semantic treatment of sentences to a significant extent. Let us take the following examples.

- A. 1. John closed the door since the wind blew through it.  
2. John closed the door although the wind did not blow through it.  
3. John closed the door as soon as I had repaired it.
- B. 1. John closed the door <sup>and</sup> so that the wind did not blow through it any more.  
2. John closed the door but the wind continued to blow through it.  
3. Yesterday John found a new girl-friend and kissed her.  
4. Mary realized that the boy wanted to take away her handbag and she began to shout, so that he hastily ran away.
- C. 1. Since the wind blew through the door, John closed it.  
2. Although the wind did not blow through the door, John closed it.  
3. As soon as I had repaired the door, John closed it.
- D. 1. John closed the door in order to prevent it from breaking.

2. John closed the door, before I could slip  
through it.
3. Mary believed that the boy wanted to take away  
her handbag and she began to shout, so that he  
hastily ran away.

In all these sentences we have two clauses, in the first of which there occurs a noun referring to a certain object, while in the corresponding second clause the same object is referred to by a pronoun. The question is, what can we say - on the basis of the material contained in the corresponding sentence only - about the object referred to by the pronoun: is the information which we find to hold about it exactly the same as the information which holds about the object when referred to by the corresponding noun - the antecedent of the pronoun? The question may seem naive. But, as observation shows, the answer to this question can by no means be "yes". And, what is most important, there appear to be quite clear regularities on which it depends when and in what the information holding about the corresponding object differs in one case and in other.

More concretely, the problem we are interested in is the following. All the given examples consist of two clauses, each of which asserts something about the object under consideration. Now, one would like to find out whether and under what conditions the information asserted about the object in the first clause will already hold about this object when it is mentioned in the second clause. What is it in fact that the pronoun in the second clause identifies? Is it the object taken merely with the information which is identified by the noun in the preceding clause, or is it the object about which also the new information holds that is asserted about it in the preceding clause? The above examples are grouped according to what they reveal with respect to this problem.

In the case of the sentences A 1 - 3, as we can see,

the information asserted in the first clauses does not hold about the corresponding objects in the second clauses. In each case, the door referred to by the NP the door should be open - it is clearly a presupposition that should hold about the doors referred to in the corresponding clauses. And it is equally easy for us to decide in each case that the same should hold about the door referred to by the corresponding pronoun in the second clause, although in the first clause it has been asserted in each case that the door becomes closed. As we would say, the pronouns in these sentences do not identify the doors under consideration as taken after what has said to happen to them in the first clauses.

In the case of sentences B 1 - 4, on the contrary, the information which is asserted about the corresponding objects in the first clauses already is contained in what is identified by the pronouns in the second clauses. So, in the case of B 1 - 2, although the doors referred to by the nouns in the first clauses should be open (just as in case of A 1 - 3), there is no doubt that in the second clauses already it = the door which is closed. And, intuitively, it is clear also that these are just the assertions made in the first clauses that have caused this modification in the information holding about the corresponding doors; so to speak, in each case of B 1 - 2 the information asserted in the first clause has already been included in the information holding about the corresponding door when this is referred to by the pronoun in the second clause. Correspondingly, in B 3, we may say, her = the new girl-friend whom John found yesterday and in B 4 she = Mary, who had realized that... and he = the boy who had wanted to ...

The C cases, apparently, belong to the same group, with B cases, although C 1 - 3 are in fact the same sentences as A 1 - 3, only the order of the main and dependent clauses has been reversed.

Finally, the D cases are presented in order to show

that the facts cannot always be so straightforwardly determined as in the A, B and C cases.

Let us try now to find out what it is that the difference between A cases, on the one hand, and B+C cases, on the other, depends on. The first thing one will notice, undoubtedly, is that this difference has something to do with the conjunctions that occur in these sentences. This becomes particularly clear when we observe that, for instance, even if we have only John closed the door {so that/ and/ but} it ..., it is already clear that it should here refer to the door which is closed, no matter how the sentence will be continued.

But what is it exactly that possesses decisive force in the case of the corresponding conjunctions? As the comparison of the A and C examples reveals, a conjunction can affect the transmission of information only in a certain direction.

Apparently, it would not be very rewarding to try to connect the phenomenon under discussion merely with the temporal consecutiveness of the facts expressed in the corresponding clauses (such a treatment is suggested, in particular, by the examples with and - see B 1 and B 2), since it would be hard to show how exactly the factor of time is involved in the meanings of such conjunctions as since or although ( C 1, C 2).

However, we appear to be in a much more familiar area when we notice that these same since and although clauses always present the presupposed information and that in the A cases the antecedent of the pronoun is in the main clause while in the C cases it is in the since/although clause, i.e., in the presupposed clause. If we now agree that the relation of temporal consecutiveness of the expressed events can be considered as a special case of the more general of relation of presupposition between clauses, then we can state a rule that adequately describes the facts of the examples A - C:

If the antecedent of a pronoun is in a clause that

stands in a presupposed position with respect to the clause where the pronoun itself occurs, then the new information which is asserted about the antecedent will be included in the information which the pronoun will identify in its clause.

Of course, this rule needs elaboration in many respects, since in the given form it is too general. The examples D 1 - 3 point to some of the facts that additionally should be accounted for. In the sentences D 1 and D 2, although the first clause is in the presupposed position, it is not the case that the information asserted in this clause holds about the corresponding object in the second clause. As is apparent, this fact has something to do with "world creating" predicates, in order to and can, respectively, in the scope of which the corresponding pronouns occur. The same situation can be observed in D 3. This sentence differs from B 4 only in that the verb believe occurs here instead of realize. But because of this difference it cannot be said that the pronoun he identifies here "the boy who wanted to ..." but, instead, "the boy of whom Mary believed that he wanted to ...". In other words, the problem under consideration appears to be directly related to the classification of predicates according to their semantic properties, as pursued, e.g. by L. Karttunen in his recent papers ("Implicative Verbs"; "The Semantics of English Predicate Complement Constructions").

## II. Consequences

1. According to the treatment generally accepted in generative grammar, in the derivation of sentences of the above types a pronoun can replace a NP only if there is a coreferent NP - the antecedent - present in the sentence and if certain formal conditions with respect to relative positions of these two NP's are met. The evident semantic reason for such a treatment is that in this way it is pos-

sible to explain how the hearer is able to discover, in the case of such sentences, what exactly is the information identified by a pronoun in a concrete case.

But from the semantic point of view this means that the NP which the pronoun will replace and the antecedent NP should be not merely coreferential but semantically identical - they should identify exactly the same information. However, as the above examples show, the formal treatment of pronominalization can be considered adequate in this respect only in the case of A type sentences. In the case of B and C (and, in fact, also D) type sentences the information identified by the pronoun is different from the information identified by its formal antecedent. In order to bring the formal treatment of pronominalization also in these cases into accordance with the intuitive one it has to be shown how in these cases the appropriate antecedents can be established.

2. What this means is, in fact, that an explicit semantic treatment of predication is needed. The examples considered here are remarkable in that they unambiguously point out what such a semantic treatment of predication should consist in. Predication should be treated as the adding of new, asserted information in a definite way to the corresponding NP's - to the arguments of the corresponding predicate. Only in this way can the needed antecedents be created in the B and C cases. For every individual predicate there should exist definite rules that determine how the modifications in its arguments are to be carried out when the predicate is asserted. In the above examples the existence of such rules becomes particularly evident in the case of the predicates close, realize, believe. The general rule formulated at the end of the previous section states the fact that the presupposed clauses should already be processed in the described manner when the pronominalization transformation takes place in the asserted clause.