SOME OBSERVATIONS CONCERNING CLAUSES OF RESULT IN ENGLISH AND POLISH

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INTRODUCTION

0.0. The aim of the present paper is to propose a scheme for derivation of sentences exhibiting CAUSE and EFFECT relation and to distinguish unambiguously sentences containing clauses of result from other types of sentences which exhibit the above relation. Further sections will be concerned with sentences containing clauses of result in a more detailed way. The starting point for the analysis is the semantics of sentences exhibiting CAUSE and EFFECT relation.

1.1. Many contemporary linguists propose beginning sentence analysis with the semantic component (e.g. Fillmore 1971; Lakoff 1969; Chafe 1970; Wierzbicka 1969; Karolak 1972). The present paper presupposes general acceptance of generative semantic principles. The main assumption of the majority of representatives of generative semantics is that semantics and syntax are united in deep structure (Lakoff 1971; Gruber 1967). In such approaches there are no pure syntactic categories and syntax is considered a formalization of semantic description. Categorial items are both semantic and syntactic.

1.2. Clauses of result are distinguishable on the semantic level since result is a semantic, not a syntactic notion. The distinction between clauses of result and other types on a purely syntactic level is sometimes very difficult or even impossible:

    1a. But then afterward you would step outside in the hall and laugh aloud a few times *so that* the neighbours in other rooms *could* think you both had just been playing around and it had all been a joke. (C. M. C. 109)

    1b. They took to their heels *so that* you *couldn't* see 'em for dust. (D. D. 48).

    2a. Janek podszedł do drzwi i zapukał.

2b. Janek spadł z trzeciego piętra i zabił się.

Sentences 1a. and 1b. are structurally homonymous in the aspect relevant here. *So that* functions in both sentences as a conjoining indicator, and *could* follows that indicator in both (the existence of *would* in the clause before the conjoining indicator in sentence 1a. is irrelevant to the present discussion because the modal may be omitted and its omission would not result in ungrammaticality or change type of EFFECT, i.e., it remains [—completion] cf. 3. 2. 3. 1.). Sentence 1a. contains clearly a clause of purpose and sentence 1b. a clause of result.

Sentences 2a. and 2b. are also structurally homonymous. However, sentence 2b. contains a clause which is clearly of EFFECT (zabił się) of the CAUSE expressed in the first clause (Janek spadł z trzeciego piętra). Sentence 2b. contains two subject-predicate constructions which are connected by a CAUSE — EFFECT relation (cf. Karolak 1972). The clauses in sentence 2a. exhibit only a simple temporal succession. *Janek podszedł do drzwi* is temporally former to the second clause.

The above consideration shows that the criterion for identification of the clauses of result should not be sought on the formal — syntactic level but rather on the semantic level.

2.1. Syntactic structures have their relational meanings. A relational meaning combines smaller elements within one bigger unit. The construction *Peter or Paul* has the relational meaning of juxtaposition. The relation is semantic, being symbolized here by means of the conjunction *or*. The relation between CAUSE and EFFECT is an example of such relations (Klemensiewicz 1971). The present paper tries to provide a semantic definition of a sentence containing a clause of result as a sentence exhibiting a specific type of relation between CAUSE and EFFECT. The general scheme for all sentences containing the above relation is as follows:
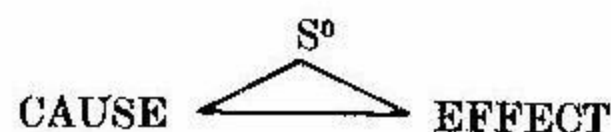

Diagram 1

S° is the uppermost symbol and is not dominated by any element. From S° we may generate two surface structure sentences (cf. 4. 2.).

——— between CAUSE and EFFECT indicates an existing relation between the constituents.

Since no categorial difference between semantic and syntactic categories is made here, CAUSE and EFFECT can be equally represented as S_1 and S_2 (perhaps with special indices) respectively, but for the scope of the present paper labels will be left for clarity of presentation.

THE NATURE OF THE RELATION BETWEEN CAUSE AND EFFECT, FEATURES IMPOSED UPON CAUSE AND EFFECT, AND THE CLASSIFICATION OF SENTENCES EXHIBITING CAUSE AND EFFECT RELATION

3.0 In the next section we will try to establish types of relations between CAUSE and EFFECT in order to obtain a classification of sentences which realize the above scheme.

3.1 One type of relation between CAUSE and EFFECT can be represented by an arrow (symbolizing implication *if ... then* as in logic) and the abstract verb [causes]. The notion of an abstract verb is similar to that of Robin Lakoff (1969).
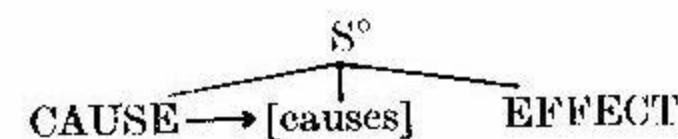

Diagram 2

The following sentences realize the above scheme:

3a. If you study hard, you will pass the exam.
3b. Jeżeli będziesz się uczył solidnie, to zdasz egzamin.
4a. If they caught him, they would shoot him.
4b. Zabiliby go, gdyby go złapali.

Traditionally the sentences are said to have conditional clauses.

3.1.2 It seems that some sentences containing clauses of result are derived from sentences of general character containing conditional clauses. The operation involves imposing a speaker's intellectual activity on the conditional scheme (i.e. drawing a conclusion from a known conditional scheme):

5a. Jeżeli uczyłeś się solidnie, to zdasz egzamin.
5b. Uczyłeś się solidnie, więc zdasz egzamin.

or perhaps from a more general scheme:

5c. Jeżeli ktoś uczył się solidnie, to zda egzamin.
5d. Ty uczyłeś się solidnie.
5b. Uczyłeś się solidnie, więc zdasz egzamin.

3.2 As far as the problem of semantic classification of CAUSE and EFFECT is concerned, we propose a set of classificatory features. This is a minimal set which allows us to distinguish types of relations between particular CAUSEs and particular EFFECT's:

CAUSE	EFFECT
[+efficient]	[+completion]
[—efficient]	[—completion]

CAUSE
  [+efficient] — means that CAUSE can elicit an EFFECT in a given sentence

[—efficient] — means that CAUSE cannot elicit an EFFECT in a given sentence

These features are discussed in section 3. 2. 1. in a more detailed way.

EFFECT

[+completion] — means roughly that the EFFECT is already accomplished in a given sentence

[—completion] — means that the EFFECT is not accomplished in a given sentence

These features are discussed in section 3. 2. 3. 1. in a more detailed way.

Features are used here for a classificatory purpose (they help us to distinguish different types of sentences which exhibit CAUSE and EFFECT relation). They are not the basis for selectional restrictions as in the interpretative theory[1].

3.2.1 Let us consider some possibilities of cross-classification of features:

$$S^c$$
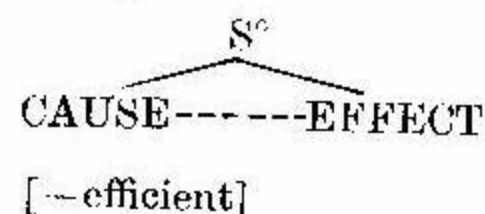$$CAUSE\text{------}EFFECT$$
$$[\text{--efficient}]$$

Diagram 3

This is the scheme for sentences containing clauses of concession. Comparing this diagram to the previous one it should be noticed that here the abstract verb [causes] is absent in deep structure. CAUSE in sentences containing clauses of concession does not carry the relationship which can be represented by the abstract verb [causes] to the EFFECT because EFFECT is "caused" by a real "cause" which is absent in sentences of this type. The following sentences realize the above scheme:

6a. Pomimo, że uczyłeś się solidnie, to jednak nie zdałeś egzaminu.

6b. Although you studied hard you have failed your exam.

7a. Pomimo że uczyłeś się bardzo mało, to jednak zdałeś egzamin.

7b. Although you studied very little, you have passed your exam.

It may seem that in sentences 6a. and 6b. the CAUSE is [+efficient], while in sentences 7a. and 7b. the CAUSE is [—efficient]. It is clear, however, that EFFECT in the above sentences is contrary to CAUSE and involves other factors than the CAUSE present in the sentences. It seems that in the above sentences the 'cause' of passing or failing the exam is not the amount of work of a student but some other 'cause' factors like 'luck', 'lack of luck', 'nervousness' and possibly many others. CAUSE because of its inefficiency here seems to be irrelevant to passing the exam. According to a speaker's (hearer's)

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[1] The features are not used here as the basis for selectional restrictions. The binary character of features in that function (i. e., to provide selectional restrictions which would eliminate deviant sentences) is unnecessary, Gruber (1967).

presupposition an item may be a cause only if it elicits a proper effect. In the case of sentences containing clauses of concession our (the speaker's) presupposition fails (cf. Wierzbicka 1969, the analysis of *chociaż*, *mimo że*, etc.).

3.2.2 Let us consider another scheme:

$$S^\circ$$
$$CAUSE \quad [causes] \quad EFFECT$$
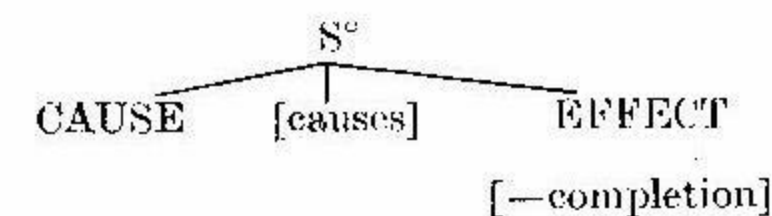$$[\text{--completion}]$$

Diagram 4

This is the scheme underlying sentences containing clauses of purpose. The EFFECT contains idiosyncratically the feature [+intention]; however, the feature is irrelevant in differentiation of this type of C and E relation from other types, because other features may clearly differentiate purposive from other clauses. Another way of handling this problem is to ascribe to the more developed scheme the abstract verb [want].

The following sentences realize the above scheme:

8a. He bundled up Alice's clothes and personal possessions to give to Lucille. (C. M. C. 105)

8b. Zagarnął suknie i rzeczy osobiste Alice, żeby je dać Lucille. (C. M. C. Polish translation, 174)

9a. He had to undress and then kneel and say his own prayers and be in bed before the gas was lowered so that he might not go to hell when he died. (J. J. 62)

9b. Trzeba rozebrać się, a potem uklęknąć i zmówić pacierz i być w łóżku nim jeszcze skręcą gaz, żeby nie dostać się do piekła, jeśli umrze. (J. J. Polish translation)

3.2.3 Finally we will present a scheme underlying sentences containing clauses of result. The scheme is as follows:

$$S^\circ$$
$$CAUSE \quad [causes] \quad EFFECT$$
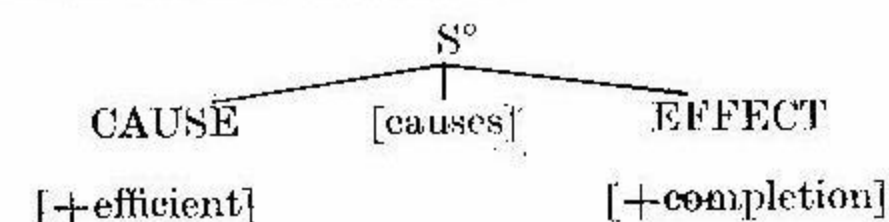$$[\text{+efficient}] \qquad [\text{+completion}]$$

Diagram 5

The features and the abstract verb [causes] constitute together the idiosyncratic property of sentences containing clauses of result.

3.2.3.1 The most difficult problem is the distinction between sentences containing clauses of result (SCR) and those containing clauses of purpose (SCP). The feature [±completion] which specifies the type of EFFECT seems

to solve the problem. EFFECT never has the feature [+completion] in the case of clauses of purpose as understood here (cf. sentences 1a., 8a., 8b., 9a., 9b.,).

Even if EFFECT is [+intended], but has the feature [+completion] such a sentence will be classified as SCR because a speaker's (and also a hearer's) attention is focused more on the completion of the EFFECT than on the intention. The test for completion may include aspect (perfective in the case of [+completion] and imperfective in the case of [—completion]). Sometimes the test is insufficient. Polish presents fewer difficulties as far as the problem of aspect is concerned. The second criterion may be the possibility of transforming sentences containing clauses of purpose into [—efficient] CAUSE which is a part of sentences containing concessive clauses. In the case of sentences containing clauses of result the transformation is in most cases impossible:

10a. Kupiłem sobie radioodbiornik, żeby móc słuchać Luxemburga.
10b. Kupiłem sobie radioodbiornik, żeby (móc) słuchać Luxemburga, ale nie mogę.
11a. Kupiłem sobie radioodbiornik, tak że mogę słuchać Luxemburga.
11b.*Kupiłem sobie radioodbiornik, tak że mogę słuchać Luxemburga, ale nie mogę.
12a. I bought myself a radio set and I can listen to the news.
12b.*I bought myself a radio set and I can listen to the news but I cannot.
13a. I have bought myself a radio set in order to listen to Radio Luxembourg.
13b. I have bought myself a radio set in order to listen to Radio Luxembourg but I cannot.

In the case of SCR the transforms are ungrammatical (11b., 12b.).
Let us consider the following sentences:

14a. Mick had grown so much in the past year that soon she would be taller than he was. (C. M. C. 112)
14b. Mick tak urosła w ostatnim roku, że niedługo będzie wyższa od niego. (C. M. C. Polish translation 182)

EFFECT seems to possess the feature [—completion], however, the speaker is convinced about the truth of the forthcoming EFFECT. EFFECT is not in the sphere of the speaker's wishes (as in the case of SCP) or intention but is very likely to happen. The speaker's certainty and the reality of the forthcoming EFFECT may decide in some cases about EFFECT's possessing the feature [+completion] as far as we can explore and judge a speaker's certainty and the reality of the forthcoming EFFECT.

3.2.4 Sentences containing causal clauses can be derived from the scheme for sentences containing clauses of result or clauses of purpose (contrary to Hartung 1964 and König 1971, who propose to derive SCR and SCP from sentences containing causal clauses) by means of a topicalization transforma-

tion. The transformation topicalizes EFFECT, and CAUSE becomes a comment. (The topicalization transformation is not entirely meaning—preserving as noticed by B. H. Partee 1971). During the transformation the abstract verb [causes] undergoes passivization:

16a. *Kupiłem sobie radioodbiornik,* tak że
      CAUSE   [causes]
     będę mógł słuchać Luxemburga
        EFFECT

16b. *Będę mógł słuchać Luxemburga* ponieważ
       EFFECT   [caused by]
    kupiłem sobie radioodbiornik
        CAUSE

SENTENCES CONTAINING CLAUSES OF RESULT

4.1. Let us return to the scheme underlying sentences containing clauses of result:

A sentence containing the clause of result is a sentence which has an underlying CAUSE and EFFECT relation which can be represented by means of the abstract verb [causes] when CAUSE has the feature [+efficient] and EFFECT has the feature [+completion] (EFFECT which possesses the above feature will be called RESULT in further considerations).
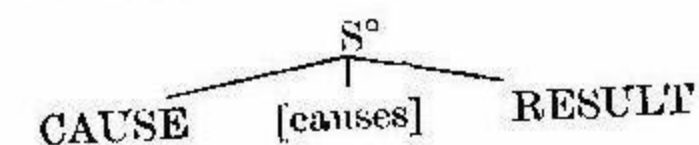
$$S°$$

CAUSE   [causes]   RESULT

Diagram 6

The feature [+efficient] can be omitted from the diagram because the presence of the abstract verb [causes] unambiguously differentiates this type of sentence from sentences containing concessive clauses.

All possible sentences which realize the above scheme will be treated as sentences containing clauses of result.

A clause of result is a deep category (the notion is somewhat similar to a hypertagmeme on the clause level in the tagmemic hierarchy). This RESULT exists regardless of the possibilities of different surface realizations such as the traditional clause of result, an adverb of result (in rare cases), a traditionally independent clause in a paratactic construction or a traditionally independent sentence.

4.2 Let us examine the following sentences in connection with the above diagram:

22. Deszcz padał przez dwa dni i dwie noce. Skutkiem czego ulice zamieniły się w rwące potoki. (Ż.)

23. The emancipation of experience from immediate biological needs and the development of the ability to communicate the newly formed ideas of experience surely went side by side. The result was a new order of complexity and versatility. (Ch.)

The sentences contain CAUSE (e.g., *deszcz padał przez dwa dni i dwie noce*), RESULT (*ulice zamieniły się w rwące potoki*) and the relation between them (*skutkiem czego* and *the result was*). There is a period which separates CAUSE from [causes] RESULT in both cases. It seems that there are two possibilities of handling the problem: one which would eliminate S° because the S° would generate two surface structures, the second would retain S° and introduce a transformation separating CAUSE and [causes] RESULT. Such a transformation would probably be also needed if we select the first possibility unless we accept that a period is in part a formal separating device of the relation [causes], but it seems that there is not any reason why we should do this since [causes] symbolizes the relation of conjunction rather than separation.

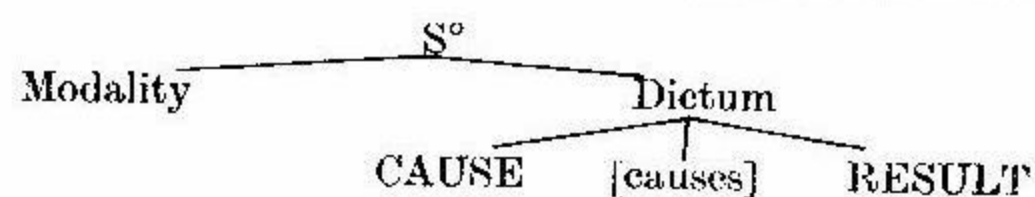We choose the second alternative due to shared sentence modality:

Diagram 7

4.3.1 The problem of the depth of analysis arises. The semantic theory which is being developed in Poland by Bogusławski, Wierzbicka, Bellert, Karolak and some others postulate an underlying semantic structure which is very deep. The representatives of the theory try to establish a set of atomic expressions (indefinibilia) which do not have a complex semantic structure. According to the representatives of the theory some simple sentences possess in their deep structure several CAUSE — RESULT relations. Grochowski (1972) presents this explication of the sentence *Jan rąbie drzewo siekierą*:

"Siekiera styka się z ręką Jana (skutek), ponieważ Jan to powoduje (przyczyna) i siekiera styka się wielokrotnie z powierzchnią drewna (skutek), ponieważ Jan to powoduje (przyczyna) i drewno zaczyna być dzielone na części (skutek), ponieważ siekiera to powoduje (bezpośrednia przyczyna), ponieważ Jan tak chce (pośrednia przyczyna)".

In our terms the above analysis would be as follows (if we accepted the explication theory):

Jan [causes], siekiera styka się z ręką Jana
CAUSE   RESULT

Jan [causes], siekiera styka się wielokrotnie z powierzchnią drewna
CAUSE   RESULT

Jan [causes], siekiera [causes] drewno zaczyna być dzielone na części
CAUSE   RESULT
CAUSE   RESULT

The reason we will exclude such sentences as *Jan rąbie drzewo siekierą* from our analysis in the present paper is that CAUSE cannot be *Jan*. *Jan* is an agent and the notions *agent* and CAUSE differ. CAUSE has to be represented as S (of 2. 1) and agent cannot be so represented in many cases.

4.3.2 Let us consider some sentences analyzed in Wierzbicka (1969). The explications may seem similar to the deep structure which underlines SCR:

Adam jest tłusty = Adam jest taki (ma to do siebie), że jego ciało jest tłuste.

Adam leży na kanapie = Adam jest w takiej sytuacji (z Adamem jest tak), że jego ciało leży na kanapie.

Such sentences have to be excluded from our analysis in spite of the characteristic formal signals for SCR and SCP present in the explication. They realize the scheme as proposed by Wierzbicka (1969) (it is not intended to be a scheme for SCR):

S_1 is such, that S_2 is P

The scheme differs from ours in the respect that it is more general. It may probably serve for the interpretation of such SCR's as:

Adam zachował się tak, że sąsiedzi musieli wezwać milicję.

or

Adam jest taki („ma to do siebie"), że kobiety za nim szaleją.

but also for such sentences as:

Adam jest taki, że jego włosy są rude (the explication of the sentence Adam jest rudy)

and

Adam jest w takiej sytuacji (z Adamem jest tak), że jego ciało leży na kanapie (all sentences are from Wierzbicka (1969).

The last two sentences do not realize our scheme:

Adam jest taki is not CAUSE nor does it cause anything. This proves that *taki, że* (such that) cannot be a dominating element in deep structure for the analysis of SCR and more abstract elements such as CAUSE, [causes], and RESULT are more helpful and adequate.

5.1 Let us procede now to the higher level of derivation of SCR. Such categories as N, V, S, NP, ANIMATE, HUMAN are both syntactic and semantic (ANIMATE as category is different from N by a degree of sensitivity—it enumerates smaller sets of elements than N) as in Gruber (1967). The principle of lexical attachment will be used in the present paper. The attachment will be polycategorial as in Gruber (1967).

5.2 The basic distinction between types of SCR is that between clauses of result expressing intensity on the one hand and manner on the other. There

are no clauses of result of intensity and manner. Clauses of result are not differentiated in that respect. This is the problem of CAUSE and [causes]. A certain element of CAUSE Adjective or Adverb can be somehow scaled. The element is of great importance in CAUSE. The appropriate degree of intensity of the element makes CAUSE efficient. Let us consider the following sentences:

24a. The wind was strong so that we were able to sail.

24b. Wiatr był silny, tak że mogliśmy żeglować.

25a. The wind was so strong that we were able to sail.

25b. Wiatr był tak silny, że mogliśmy żeglować.

Sentences 24a and 24b differ semantically from sentences 25a and 25b. In sentences 25a and 25b the appropriate degree of the strength enables us to sail and in sentences 24a and 24b the mere fact of the strength of the wind enables us to sail. The fact that sentences 25a and 25b entail a degree of intensity or comparative element can be illustrated by the possibility of the occurrence of CAUSE in anaphoric statements:

26a. The wind was so strong...

26b. Wiatr był tak silny...

27a. The wind was strong so...

27b. Wiatr był silny, tak...

Sentence 27b can be grammatical if uttered with a special type of intonation.

CAUSE in sentences 25a and 25b has probably the following semantic structure:

    The wind was strong to the certain extent

    Wiatr był silny do pewnego stopnia

The entire sentences have probably the following semantic structure:

    The wind was strong to the certain extent

    It causes (so that)

    We were able to sail

For the generation of such sentences we propose a rule: Adjective → (EXTENT). Extent means here that adjective is scaled (possesses a degree of intensity). This rule is similar to rules in Gruber (1967 : 60) (A→(B), when A is a necessary condition for B and B is a more sensitive category than A). The term 'extent' is used in König (1971) as a binary feature. The attachment of *so* before the adjective can be illustrated in the following way:
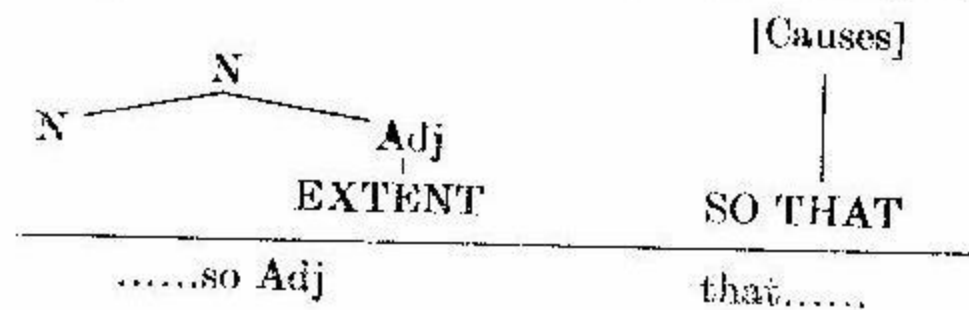

Diagram 8

In cases when Adjective or Adverb can be rewritten as EXTENT, the lexical attachment rule will map *so* or *such* before an Adjective or Adverb during the lexical attachment process. The following statement can be made: *so* can be attached immediately before *that* when the environment relevant to the insertion does not contain the category EXTENT. If the category is present *so* or *such* have to be attached before the dominating category of the category EXTENT. The same is true for English and Polish.

5.3 The problems examined above had the same relevance to English and Polish. Nevertheless some semantic structures of clauses of result differ in both languages. The difference is met even at a low level of analysis which fact is rather surprising. Let us consider the following Polish sentences:

28. Rozległ się taki huk, że aż szyby z okien powypadały.

29. Roman śpiewa i gra tak pięknie, że aż serce rośnie. (overheard)

The unique characteristics of these SCRs is the emphatic or extra strong RESULT. The English language lacks such semantic and formal structures. (This, of course, does not imply that English cannot describe such a segment of reality. It is possible to describe the extraordinary force of RESULT by means of appropriate adjectives or adverbs).

Therefore a contribution to our scheme has to be made in order to account for both languages under consideration. *Aż* in such Polish constructions belongs probably to RESULT. It seems, however, that it does not modify any special element of RESULT but the whole dictum. (In spite that it is tied most closely to a verb). There are probably two ways of handling the problem. One possibility will be to introduce a rule sort RESULT (EMPHATIC) or (EXTRA-ORDINARILY STRONG). The category will be a sine qua non condition for the attachment of *aż*.
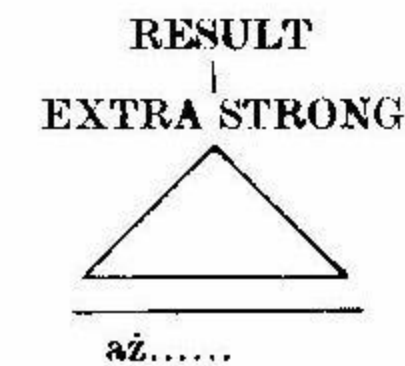

Diagram 9

The second possibility of handling the problem will be the expansion of RESULT into MODUS and DICTUM (Modality and Proposition or Nucleus):
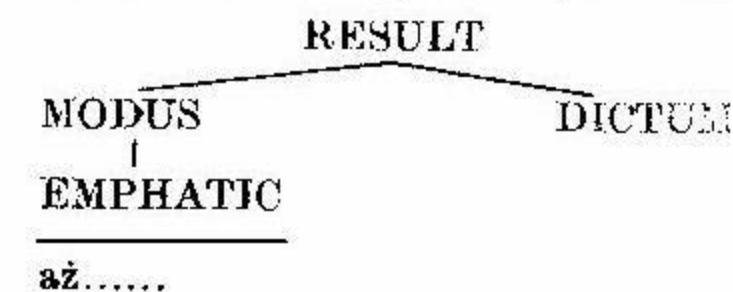

Diagram 10

There is almost no difference between the two alternative solutions except technically. The selection of one alternative will depend on the relevance of Modus dominated by RESULT to the further analysis.

5.4 It seems that Polish has more connecting indicators in the case of SCŔ (*taki... że, tyle... że*, etc.).
However some of them have complex semantic structures. Let us examine Polish sentences with *tyle* and some equivalent English sentences:

30a. Miałem kiedyś tyle pieniędzy, że kupiłem sobie dom z ogródkiem i samochód.

30b. Once I had so much money that I bought myself a house with a garden and a car.

It turns out from the comparison that *tyle* is *tak dużo* in deep structure. In English that meaning is not compressed into one unit (*so much, so many*).

It should be noted that there is another word $tyle_2$ which is semantically different from $tyle_1$ e.g,.

Skręcił w pierwszą lepszą ulicę i tyle go widziałem (TV $tyle_2$)

Probably there is also $tyle_3$ meaning enough.

The above interpretation of $tyle_1$ allows us to reduce the number of conjoining indicators in deep structure. If DUŻO occurs in deep structure it may be optionally attached as *tyle* in the environment of TAK, ŻE.
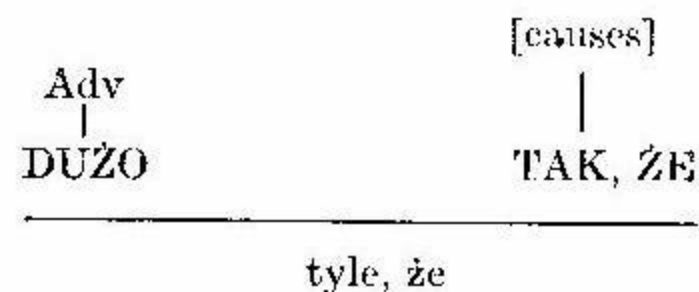
```
      Adv              [causes]
       |                  |
     DUŻO              TAK, ŻE
   ─────────────────────────────
            tyle, że
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Diagram 11

e.g.

31. Widziałem tyle, że już mnie nic nie zdziwi.
and for sentences like 30a.:

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      Adv              [causes]
       |                  |
    EXTENT                |
       |                  |
     DUŻO              TAK, ŻE
   ─────────────────────────────
            tyle ..., że
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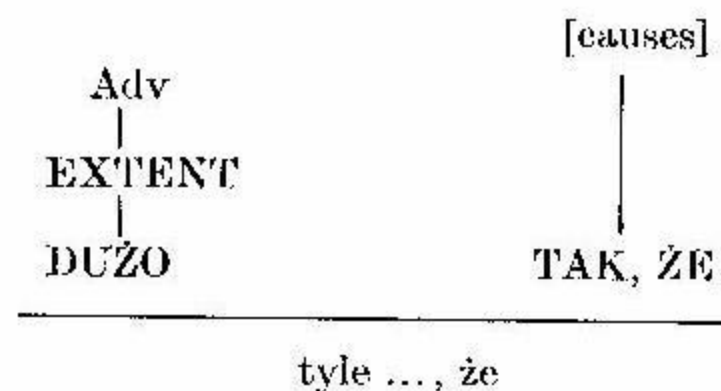
Diagram 12

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