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TOWARDS A PRAGMATIC APPROACH TO ANAPHORA

1.1 It is widely accepted that the concept of anaphora is set up to account for anaphoric relations in a discourse. It refers to the possibilities that exist for linking antecedents with their anaphoric items. Functioning of anaphoric items is traditionally connected with pronouns being correlated with their antecedents. From this point of view, the interpretation of anaphora includes the description of anaphoric pronouns. Palek (1968) introducing this term, goes back to Greek grammars stressing the fact that pronouns, though defined in different ways, have two functions: anaphoric and deictic (cf. Palek 1968). The important thing is that "(...) whether the pronoun is deictic or not, it can refer anaphorically to the referent of a correlated antecedent expression which does not conflict with the description content of the pronoun and which either precedes the pronoun in the same text or, under grammatically restricted conditions, follows it in the main clause of a complex text-sentence." (Lyons, 1977:664)

Generally speaking the problems of anaphora have been presented from two points of view: the first one is concerned with "the description content of the pronoun" that functions as a substitute of a given expression, and the second one defines "grammatically restricted conditions" needed to establish anaphoric relations. Accordingly we shall mention some approaches to the problems stated above, before taking into consideration the sentences where the description of anaphoric relations is quite a controversial matter.

1.2 Before presenting some principles governing the organization of anaphoric relations, let us mention some syntactico-semantic theories defining the well-formedness conditions on anaphoric relations from the point of view of anaphoric pronouns. Transformational grammarians have attacked this problem from two directions. Pronouns are either to be derived from an underlying form of NPs by a transformation, or interpretive rules can account for their insertion when the full antecedent structure necessary for pronominalization is present.

In the present analysis we shall follow the theory of Chomsky (1977) and compare it with the works of Jackendoff (1972), Morrisroe (1969) and Reinhart (1981) in order to answer the question how anaphoric relations are accounted for by syntactic restrictions.

The most common view is that "in anaphora a pronoun or a pronoun like element has the reference of something before in the text" (Grimes, 1975:11). To mark this reference, Chomsky (1977) introduces the notion ( $\pm$  anaphoric to  $i$ ) saying that "A pronoun marked (+ anaphoric to  $i$ ) will be interpreted in LF as anaphoric to NP $i$ . A pronoun marked (-anaphoric to  $i$ ) will be understood as disjoint in reference to NP $i$ ." (Chomsky 1977:73)

Generally speaking, syntactico-semantic theories analyse anaphoric relations from the point of view of pronominalization and syntactic domains. We shall follow Jackendoff's (1972) presentation of pronominalization in order to discuss syntactic constraints on anaphoric relations. On the other hand, syntactico-semantic theories stress the fact that "... anaphora interpretation is restricted by properties of constituent structure" (Reinhart, 1981:605), which leads to formation of the precede-and-command rule (cf. Reinhart, 1981:606).

1.3 Whatever devices are used to generate or block anaphoric relations, they have to be sensitive to the conditions determined by a given discourse. It is the purpose of this paper to point out some of them, taking into consideration the following sentences:

1. In Mary's apartment, she smokes pot.
2. Charles has to speak with a professional, because he needs to ask him about it.
3. I like Americans, but I wouldn't like to live there.
4. I speak French fluently, because I lived there for eight years.
5. I received a letter from my aunt and I have to go there.

These sentences are counterexamples to the rule of pronominalization and the precede-and-command rule. The syntactic constraints restricting anaphoric relations can neither block nor generate these examples. The point is that each sentence exemplifies a different problem of anaphora. In the first sentence the pronoun "she" cannot refer to its antecedent not because of the syntactic restrictions on anaphoric relations, but because of the inherent properties of its antecedent. Consequently, a problem arises how to account for the fact that the sentence (Reinhart, 1981:629):

6. In John's newly renovated apartment on 5th Avenue, he smokes pot.

is acceptable. The questions are: what changes take place in anaphoric relations to improve them and under what conditions they are formed?

The syntactico-semantic restrictions do not take into consideration a given anaphoric pronoun that can influence the attributive feature of its antecedent. The sentence (2) presents a very important factor of anaphoric relations from the point of view of a generic anaphoric pronoun.

The sentences (3), (4) and (5) show that some anaphoric relations are based on a pragmatic component that suspends syntactic control. Consequently, no syntactic constraints can explain the difference between the sentences:

3. I like Americans, but I wouldn't like to live there.
- and 7. \*I like Americans, but I wasn't there.

The sentences (1-7) exemplify some very important features of anaphoric relations that cannot be accounted for by the syntactic conditions. The point is that there are some other factors that should be taken into consideration to define anaphoric relations.

1.4 In order to answer the question how to define anaphora we shall discuss it from different points of view. In section (2) we shall present some syntactic constraints on anaphoric relations. The point is that these constraints reveal that there is an asymmetry with respect to the relation between an antecedent and its anaphoric item. In order to explain it, Jackendoff (1972), Morrisroe (1969) and Reinhart (1981) offer different constraints that we shall present and compare. In section 3 we shall define coreference and cooccurrence from the point of view of anaphoric relations. To show that anaphora comprises a great variety of problems we shall introduce different terminology and divide anaphoric items into generic and specific terms. In section 3.3 it will be shown how the previously presented constraints on the syntactic level interact with pragmatic factors to derive the sentences (2-6). In particular our analysis will extend to the contrast between the sentences (3) and (7).

It is our intention to show how the numerous constraints on different constructions can be accounted for within the theory where attention is paid to the interaction of syntax, semantics and pragmatics.

2.1 According to Jackendoff (1972) all the restrictions on anaphoric relations must be explainable in terms of the inherent and derived properties and constituency relations of an antecedent and its anaphoric item. Anaphoric pronouns marked with the feature (+ pro) are present in the deep structure, but their antecedents are determined in the semantic component. That is why the rules of semantic interpretation establish relations between an antecedent and its anaphoric pronoun. On the other hand, by applying the pronominalization rule in an environment

and ordering of other rules, Jackendoff (1972) shows that this is a systematic phenomenon. The general ordering of rules depends on the properties of anaphoric relations. In generative grammars it is obviously very difficult to separate the treatment of anaphora formation from the other restrictions which hold between particular elements and their anaphoric relations.

According to Jackendoff (1972:188) a complete form of the pronominalization rule is as follows:

8. Enter in the table: NP<sup>1</sup> coref NP<sup>2</sup> + pro  
unless NP<sup>2</sup> both precedes and commands NP<sup>1</sup>.

He mentions two restrictions on pronominalization. The first one concerns animacy, i.e. backward pronominalization "does not apply if the antecedent is inanimate" (p.174), and the second one is an asymmetry, "stated somewhere in the environment of pronominalization" (Jackendoff, 1972:175), between an antecedent and its anaphoric item, as exemplified by the following sentences (Jackendoff, 1972:122):

9. In her apartment, Mary smokes pot.
10. \*In Mary's apartment, she smokes pot.
11. In the apartment she rents, Mary smokes pot.
12. In the apartment Mary rents, she smokes pot.

Comparing these sentences we can see that pronominalization fails in the case of the sentence (10), and Jackendoff (1972) concludes that "if an antecedent is embedded under S, the asymmetry disappears and forward pronominalization is possible" (1972:175). However, this restriction on pronominalization does not specify the details of the procedure of anaphora formation; it rather specifies the appropriate output of this procedure. Consequently taking into consideration Jackendoff's constraint we cannot state why the sentence:

6. In John's newly renovated apartment on 5th Avenue,  
he smokes pot.

is acceptable. "Pure" syntactico-semantic constraints seem to be of no help in such examples. The question is whether the

sentence (6) is possible because of the information conveyed by the antecedent. If the answer is positive then we still have to decide how to define the information contained in a given antecedent to generate anaphoric relations.

2.2 A similar problem is discussed by Morrisroe (1969). She suggests that the restrictions on optional pronominalization specify the details of the procedure of anaphora formation and make it possible to avoid the generalization present in Jackendoff's analysis.

Analysing the sentences (Morrisroe, 1969:187):

13. In Dave's apartment, Dave charms Michelle with sweet words.
14. In Dave's apartment, Michelle charms Dave with sweet words.

where two equi-NPs are present, Morrisroe (1969) says that if a possessive NP precedes a non-possessive equi-NP a sentence is grammatical, and she states the following restriction for optional pronominalization:

15. In a complex sentence, NPs must be in separate clauses. If there are two possessives in the sentence both may be retained unless a third NP precedes one of them. (Morrisroe, 1969:188)

Accordingly the sentence

16. In Mary's apartment, Mary smokes pot.

is grammatical, although the sentence

10. In Mary's apartment, she smokes pot.

is ungrammatical.

Analysing pronominalization, Morrisroe (1969) says that one of the factors of optional pronominalization is stress, because "The more the stress on the NP is reduced, the more prone the NP seems to optional pronominalization. Thus a very short sentence, with less chance of reduced stress on the NPs, would be less likely to retain both NPs than would a longer sentence with

modifying phrases or clauses which reduce the stress". (Morrisroe, 1969:193)

It must be pointed out that the particular kinds of restrictions, for example on optional pronominalization, suggest that there are some regularities in anaphora formation that cannot be defined by such general restrictions as presented by Jackendoff (1972). However, it is not clear how the example

6. In John's newly renovated apartment on 5th Avenue, he smokes pot.

could be explained. No argument is offered by either Jackendoff (1972) or Morrisroe (1969).

2.3 The analysis presented by Reinhart (1981) is based on the fact that "the natural tendency of a coherent discourse is first to establish a new referent and then to refer back to it anaphorically" (Reinhart, 1981:610). The asymmetry is considered from the point of view of the precede-and-command rule. Accordingly, the structural restrictions on anaphoric relations are defined by the domain of a given NP. Reinhart (1981) says that "...the constituent-command (c-command) defines the syntactic domain of a given node as follows: The domain of a node A consists of all and only the nodes c-commanded by A." (Reinhart 1981:614)

She questions the correctness of the syntactic constraints presented by Jackendoff (1972), or the restrictions on optional pronominalization by Morrisroe (1969), giving the following examples:

- 17a. According to Ben, he won the race.  
b. In front of Ben, he held a candle.
- 18a. With Rosa's new job, she'll make a lot of money.  
b. With Rosa's peacock feather, she tickles people.

The point is that anaphora cannot be defined, unless one accepts the claim of Reinhart (1981) that

19. "the domain of the subject  $NP_1$  is the whole subject (namely the constituent dominated by S), since the subject c-commands all the nodes in S. The domain of the subject,  $NP_2$ , consists of the nodes dominated by the BP, since the branching node most immediately dominating it is the VP. The domain of the "object of the preposition"  $NP_3$  consists of only PP, since  $NP_3$  c-commands nothing outside the PP." (Reinhart 1981:616)

According to Reinhart (1981) a given anaphoric item receives its interpretation from a linguistic antecedent present in a discourse, under the condition that structural restrictions are based on the precede-and-command rule.

If we decide that structural restrictions concerned with the syntactic domains define the thematic relationship, then we have to analyse a given text in which a particular pattern of information is expressed. This element is absent in Reinhart's analysis and consequently the acceptability of the sentences (2-6) remains a mystery.

3.1 The foregoing discussion indicates that anaphora is a text creating component. Palek (1968) says that "A text arises out of a sequence of isolated sentences whose mutual dependences are not given by any structural means. The context is built on semantic relations which have no formal expressions in language. There exists no special grammatical or lexical means for the structure of the text... . All the restrictions existing in the text are already contained within the framework of the sentence and so they can be investigated with this in view." (Palek, 1968:130)

Attempting to understand the organization of a text, Halliday (1973) finds it useful to introduce "a cohesive tie (...) to refer to a single instance of cohesion, a term for one occurrence of a pair of cohesively related items" (Halliday, 1973:3). On the other hand, Palek (1968) tries to reduce the anaphoric



relations to coreference and cooccurrence. Although he uses the term "cross-reference", it seems to be only a question of terminology, as his "cross-reference" is divided into "strict identity" and "type identity". The "cross-reference of type identity" is interpreted by "two (or more) expressions having the same sense as reference" (Palek, 1968:55). Also Bilý (1979) makes a distinction between personal pronouns and pronouns of type. He says that "personal pronouns (...) are used for coreference relations, while pronouns of "type" (e.g. "jeden" (one), "druhy", "jiny" (another) etc. are used for cooccurrence" (Bilý, 1979:153). To illustrate it let us examine the following sentences:

20. John got home late and he was very tired.

21. Max chased a klipspringer and Mary chased one too.

The sentence (20) is a typical example of coreference, while the sentence (21) of cooccurrence. Discussing the sentence (21), Johnson (1973) says that this is an example of noncoreferential pronominalization, because "a klipspringer" and "one" refer to different individuals. Since these two expressions have "the same sense as referent" and there is "the type identity" (Palek, 1968) we can say that the anaphoric relation between the two elements is that of cooccurrence. On the other hand, to make these two items coreferential, we must add something like "and they were the same animals" (Johnson, 1973:252).

In the present analysis of anaphora we shall treat coreference and cooccurrence as important factors in considering a series of constraints on the occurrence and interpretation of anaphoric elements. The previously presented term "a cohesive tie" will help us to show a relation between an antecedent being either a general term or a singular term (cf. Palek, 1968:55), and an anaphoric item being a pronoun. The terms "general" and "singular" have been defined in many ways since they comprise a great variety of problems. In the present analysis, by a general term we mean a generic term and a non-definite description, by a singular term we mean not only a proper name and a singularized general term (cf. Palek, 1968:55), but also

a definite description. We shall argue that this differentiation makes it possible to see the role of a generic anaphoric pronoun in the sentence (2). We shall state that an antecedent can either be referential or attributive because of its anaphoric pronoun.

3.2 In 1966 Donnellan distinguished the attributive and referential use of definite descriptions. Thus, the expression "the murderer of Smith is insane" may be understood in two ways. Firstly, the description is used to pick out the individual about whom the speaker is saying something, and this is the referential use. Secondly, in the case of the attributive use of the description there is no particular individual whom the speaker refers to. A context which would invite the referential use of "Smith's murderer is insane" is one in which the speaker is acquainted with the individual described as the man who killed Smith. A context which would introduce the attributive reading is one in which "Smith's murderer" is unknown to the speaker. To sum up, the criterion for determining whether a description is attributive or referential has to do with whether the speaker is referring to an individual, or whether he is stating something about whoever meets a given description. We shall assume that the term "attributive definite description" belongs to a group of general terms, and "referential definite description" to singular terms.

It seems that to define anaphora we have to pay more attention to potentially anaphoric items. Accordingly, the differentiation between attributive and referential description makes it possible to analyse anaphoric relations. The point is that the mutual relation between an antecedent and its anaphoric item is achieved because a given context makes it possible. In order to see how this is done we have analysed coreference and cooccurrence, and consequently we have divided anaphoric elements into general and specific terms. Different terminology used to define a cohesive tie from the point of view of coreference and cooccurrence proves that anaphora comprises a great variety of problems. Consequently, we are always

forced to make some simplifications to present some of the features of anaphora and in this way we limit the presentation of anaphoric items.

3.3 The differentiation between attributive and referential description makes it possible to analyse the anaphoric relations in the sentence:

2. Charles has to speak with a professional,  
because he needs to ask him about it.

The case that this sentence exemplifies is based on an anaphoric relation between a singularized term and an anaphoric item used generically. Discussing this example Bileý(1979) says that "a professional" is an attributively used NP, although "the referential use is not out of question - NP can mean a certain professional" (Bilý, 1979:152). We have to stress that it can be done by changing the anaphoric relation between these two items. We would have to specify the context of the pronoun "he" saying, for example, that "This person can only be Mr Brown". Therefore referring to a nonspecific antecedent, an anaphoric pronoun gets its generic function, but at the same time the antecedent gets its attributive nature. In other words introducing the notion (-anaphoric to i) (Chomsky, 1977:73) we decide about the attributive feature of a given antecedent. Bilý(1979) is right saying that anaphoric relation depends on the difference between definite description vs. non-definite description, the difference between attributive vs. referential use of an expression. Consequently, it is possible to show that a generic anaphoric pronoun can influence the attributive feature of its antecedent. The important thing is that this differentiation can be done only after taking into consideration the organization of a given text.

The potential incorrectness of the sentences:

3. I like Americans, but I wouldn't like to live there.
4. I speak French fluently, because I lived there for eight years.

5. I received a letter from my mother and I have to go there.

is relative to the claim (19). Let us decide that (19) does not represent the only possible view about anaphoric relations, but summarizes the structural approach to anaphora. A decision that these sentences are acceptable involves suspension of the requirement of syntactic control.

Let us examine the sentence:

3. I like Americans, but I wouldn't like to live there.

Although this sentence differs from:

22. I like America, but I wouldn't like to live there.

7. <sup>M</sup>I like Americans, but I wasn't there.

it seems that we have no problems with supplying the missing information, and "there" is defined as "America" by coreference to its antecedent, though the name of America is not mentioned. The question is why (3) and (7) differ in their acceptability. Let us compare these sentences with:

4. I speak French fluently, because I lived there for eight years.

23. <sup>M</sup>I lived in France for eight years and I speak it fluently.

In (4) the antecedent is "French" and its anaphoric item is "there", but in (23) we change the situation in such a way that "France" is an antecedent and "it" (?=French) its potentially anaphoric item. Anaphoric relations in (7) and (23) are blocked. Comparing the pair of sentences (3) and (7) with the sentences (4) and (23) we have to point out the importance of thematic relationship (cf. Danes, 1974). The entities Theme and Focus are needed in discourse grammar to define anaphoric relations. They frame a sentence into the form of a message about one of its constituents that is functioning as an antecedent. Accordingly in the sentence

5. I received a letter from my mother and I had to go there.

the anaphoric pronoun "there" refers to its antecedent "my mother" by establishing coreference to the underlying feature "the place of my mother's stay". It does not matter how deeply this feature is embedded since "there" is capable of referring to it, making the sentence understandable, although as Corum (1973) says "the acceptability of such a case is subject to wide idiolectal variation (...) and the threshold of acceptability for sentences such as these varies greatly from speaker to speaker" (Corum, 1973:95). Further examples given by Corum (1973:91) support this opinion:

24. New Yorkers think it's swinging city.  
(it=New York)
25. All linguistic journals should be sent to that department.  
(that=linguistic)

The interpretation of these sentences requires putting to use knowledge and experience (and consequently involves the introduction of a pragmatic component into the language model). Thus, uttering sentences (2-5) and (24-25) the speaker assumes that the addressee knows some nonlinguistic facts. Although Postal (1969:214) questions the correctness of the sentences:

- ?26. Harry is a New Yorker, but I wouldn't want to open a store there.
- ?27. When two Australians entered the room, Max claimed it was a rotten country.

it seems that they are acceptable. It is possible for a given pronoun to acquire not only its anaphoric but also deictic function. The important thing is that by separating these functions we always limit the analysis of anaphoric relations, which was shown in sections 2.1. and 2.2. The sentences (2-5) and (24-27) function as minimal texts that supply the information needed to establish anaphoric relations and to avoid conflicting descriptions. These sentences belong to a special

class of natural language processes, which is beyond the class of processes defined by structural restrictions at the sentence level. They present a shift of anaphoric relations in a given text to keep the natural tendency of a discourse.

4. By way of conclusion the most important points are repeated below.

1. Speakers cannot always decide without doubt about the well-formedness of anaphoric relations (cf. the sentences 26, 27).
2. Asymmetry shows the natural tendency of anaphora, i.e. the irregularities in anaphoric relations (cf. the sentences 17, 18).
3. The feature (+anaphoric to i) is introduced not only to mark pronominalization, but also to show that anaphora is predicted by the thematic representation under the condition that there is a presupposition of the existence of the NP being an antecedent. (cf. sentences 3-6)  
The notion (-anaphoric to i) decides about the attributive feature of a given antecedent (cf. the sentence 2).
4. The selection of syntactic constraints and restrictions on thematic representation should be checked against a particular discourse in which anaphoric relations are formed.
5. Anaphora makes use of knowledge and experience of a speaker.
6. Defining a discourse as "a string of Ss" (Gueron, 1980:662), we can apply a discourse filter (Gueron, 1980:662):

NP Focus of  $S_i$   $\longrightarrow$  NP Theme of  $S_{i+j}$

to account for anaphoric relations in such sentences as:

3. I like Americans. I wouldn't like to live there.  
Discourse filter shows that syntactic and contextual conditions on anaphoric relations can be combined to form a rule of well-formedness.

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W KIERUNKU PRAGMATYCZNEGO ZBLIŻENIA DO  
ANAFORY

Streszczenie

W artykule przedstawiono analizę anafory uwzględniając teorię syntaktyczno-semantyczne opisujące relacje anaforyczne z punktu widzenia funkcji zaimka (pronominalizacja). Celem artykułu była analiza zdań, w których funkcjonowanie relacji anaforycznych nie może być opisane za pomocą istniejących zasad i reguł, a tym samym wykazać niekompletność dotychczasowych ujęć. W wyniku opisu relacji anaforycznych zaproponowano analizę tekstu wprowadzając pojęcie "discourse filter". Pragmatyka została potraktowana jako punkt wyjścia do analizy anafory, oraz jako zbiór stwierdzeń na temat asymetrii i koreferencji wyrażen anaforycznych.

