

## SOME REMARKS ON THE VERBS OF PERCEPTION IN ENGLISH AND POLISH

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### 1. INTRODUCTION

The aim of this paper is to present some basic facts concerning the semantic and syntactic characteristics of the English verbs of perception as compared to their Polish equivalents. The verbs in question constitute a unique subclass of the V category, and the reasons for assigning them separate semantic labels in both languages are manifold. In the first place, a native speaker, relying on his intuition and on knowledge of extra-linguistic reality rather than on any linguistic facts, can distinguish the five verbs of perception from all the other verbs he uses. Since all highly developed organisms perceive the world by means of five senses, i.e. sight, hearing, touch, smell, and taste, they automatically become subject to five distinct perception processes, i.e. they can *see*, *hear*, *feel*, *smell*, and *taste*, respectively. Hence, these verbs referring to empirically observable phenomena were traditionally treated as members of a closed system, with one feature, PERCEPTION, in common. It must be noted here, though, that they only describe the process of perceiving given phenomena thanks to appropriate organs enabling the animate being to undergo the sensation without any specific action directed at the object of perception. Consequently, the examples below, containing the afore-mentioned verbs express what was traditionally called "the receiving of an impression by the senses independently of the will of the person concerned" (Poutsma 1926 : 341), or passive perception (Palmer 1966 : 99), more recently labelled as inert perception (Leech 1971 : 23) or cognition (Rogers 1971 : 206; 1972 : 304):

1. *I (can) see pink elephants*
2. *I (can) hear strange noises*

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<sup>1</sup> For the semantic implications of the occurrence of modal auxiliary *can*, cf. Palmer (1966 : 96).

3. *I (can) feel a nail in my shoe*
4. *I (can) smell perfume*
5. *I (can) taste spices*

The present analysis, however, can by no means be confined, to the cognitive aspect of perception, since both in English and in Polish two other aspects of this phenomenon should be taken into account. Consider the following examples:

6. *I am looking at pink elephants<sup>2</sup>*
7. *I am listening to the strange noises*
8. *I am feeling the nail in my shoe*
9. *I am smelling the perfume*
10. *I am tasting the spices*

They describe the activity performed by the agent to be affected by the given impression, as opposed to the process of inert perception (or cognition) expressed by 1 - 5. Consequently, the three process verbs *feel*, *smell*, and *taste* become activity verbs in 6 - 10, whereas *see* and *hear* are replaced by their active counterparts, i.e. *look at* and *listen to*, respectively. The traditional term for these verbs was active perception (Poutsma 1926 : 56), and has also been adopted recently (Leech 1971 : 23; Rogers 1971 : 214), as the most suitable label. It seems worth noting at this point that some relevant terminological variations appear in Chafe's classification of verbs, later on modified by Cook (1972b). Namely, Chafe (1970 : 100) claims that only intransitive verbs accompanied by agent, the doer of the action, can be called active, whereas all the transitive verbs taking both agent and patient are process-action verbs, since the verb in these sentences is both a process and an action. As a process it involves a change in the condition of a noun, its patient. As an action it expresses what someone, its agent, does. The agent is still someone who does something... and does it *to* (or sometimes *with*) something, the patient of a process.<sup>3</sup>

The third group of verbs<sup>4</sup> occurs in sentences the syntactic and semantic representations of which differ to a large extent from the examples 1 - 10:

11. *The pink elephants look funny (to me)*
12. *The strange noises sound familiar (to me)*

<sup>2</sup> The possibility of taking the progressive aspect in the case of active verbs of perception as opposed to the cognitive and flip verbs is discussed in Palmer (1966 : 99 - 100) and Leech (1971 : 23).

<sup>3</sup> For the explanation of terminology, see Chafe (1970 : 100).

<sup>4</sup> The fourth possible use of *see*, *hear*, and *feel* followed by S will not be dealt with here, for the obvious reason that in such sentences the three verbs do not convey the meaning of perception process, but refer to "understanding", "having got the information", and "having the feeling or conviction", respectively, cf.

*I see (hear, feel) you do not know anything about Nixon.*

13. *The nail in my shoe feels sharp (to me)*
14. *The perfume smells sweet (to me)*
15. *The spices taste hot (to me)*

What accounts for their syntactic peculiarity is the rearrangement of arguments similar to that characteristic of passivized sentences as compared to their active counterparts. In this case, the animate subject perceiving the sensation in 1 - 10, switches in 11 - 15 to the position of an object which, in turn, becomes the surface subject. This syntactic operation focuses our attention on the object perceived and on the quality of the perception — a new element absent from 1 - 10. Hence, the remaining argument — Percipient (cf. below), is of minor importance and becomes optional, as it happens in majority of passive constructions.

This problem was already touched upon by Fillmore (1968 : 20), who pointed out the *like/please* contrast involving the reverse order of their accompanying noun phrases. Postal (1971 : 39) further elaborated on the issue of sentences "involving the class of verbal/adjectival forms that designate psychological states, processes or attributes." Hence, he labelled the rule accounting for their formation a psych-movement which

"... is formally similar to passive in that it moves an NP from grammatical subject position into the predicate and causes it to be supplied with a preposition. At the same time, the rule moves an NP from the predicate into grammatical subject position".

Also, he relates the psych-movement verbs to active verbs from which, according to him, they are derived.

Rogers, on the other hand, proves in his two articles that the psych movement or, as he calls them, flip verbs are the most logical derivatives of cognitive, not active perception verbs (Rogers 1971 : 214 - 5):

"Sentences involving the flip verbs appear to presuppose corresponding sentences involving the cognitive form. That is, in order for either 15. or 16. to be true or false, 17. must be assumed to be true:

15. Reuben looked stoned to me
16. Reuben did not look stoned to me
17. I saw Reuben.

Since this point has been analyzed by Rogers quite extensively, and later on followed by Lipińska-Grzegorek (1974), it will not be discussed here more thoroughly. It must be noted, however, that regardless of the truth value of this argument cited above, Postal's terminology remained unchanged in the further discussion of the verbs designating perception, cognition or psychological experience. Fillmore (1971 : 42), uses it analysing the case hierarchy of verbs taking Experiencer, Instrumental, and Object:



"The so-called psych-movement verbs require a transformation which moves the highest non-Experiencer NP into the first position. The passive T-rule is a more general reranking transformation which puts an original Experiencer or Object or Goal NP into the first position, including the modification in the form of the verb".

The present issue was also dealt with in several of Cook's works (Cook 1972 : 22; 1973 : 72 - 3; 1974 : 23 - 4).

Having considered the analogy between the operations of psych-movement and the passive transformation, the discussion of some still existing controversial points, i.e. Postal's vs. Rogers' arguments, will be left aside at present, as being beyond the scope of this paper. Thus, it will be limited to the presentation of the semantic model for each of the above-mentioned groups of verbs, the relationships between them being touched upon only marginally (Section 2). Section 3 will be devoted to lexical rules, i.e. it will be shown, by means of contrasting the corresponding English and Polish corpora, how the ideas of cognitive, active, and flip perception are expressed in both languages. Finally, the syntactic rules deriving English sentences will be compared to those accounting for the formation of the equivalent structures in Polish.

It must be added that each section starts with a theoretical basis for a further elaboration of the respective models in English. Their validity for the Polish corpus is checked immediately and the necessary changes are introduced, so as to obtain the overall picture of the basic contrasts between the verbs of perception in both languages.

## 2. SEMANTIC ANALYSIS

2.1. As was emphasized in the introduction, all three groups of verbs in question, i.e. cognitive, active, and flip, respectively, have one underlying feature, PERCEPTION, which should be further specified for each of the senses. I suggest that the variables accounting for the distinction of particular perception processes take the names of the organs responsible for the occurrence of these processes. Hence, *see*, *look at*, and *look* contain the feature [+eye]; *hear*, *listen to*, and *sound* [+ear], etc.<sup>5</sup>

Before proceeding with the construction of the appropriate semantic model of perception verbs as a class, it should be decided which of the two main constituents of a sentence, i.e. NP or VP, is to be treated as central, hence having impact upon the selectional features of the other element. Both

<sup>5</sup> The animate beings employing other parts of their bodies to get given impressions will not be taken into account here. Bats "seeing" things thanks to spatial orientation, as well as the blind who "can see" with their hands are marginal cases and the labels chosen here are rather the reflection of what are generally believed to be the perceptors employed in the perception process in question.

Fillmore and Chafe seem to speak of the same deep structure consisting of a verb and a series of noun phrases. The centrality of the verbal element is, however, the main point of controversy.

In his classical presentation of case grammar, Fillmore (1968 : 21) already viewed the structure of a sentence as consisting of a verb and one or more noun phrases, each associated with the verb in a particular case relationship. The secondary position of the verb as selected according to the case environments (or case frames) which the sentence provides established at that time (Fillmore 1968 : 26), is still maintained in his latest writings:

"Predicators can be classified according to the possible arrays of cases they can occur in construction with and to the processes in the sentence they trigger". (Fillmore 1971 : 38).

On the contrary, Chafe's contention is that in the configuration of a verb accompanied by some noun phrases "the verb will be assumed to be central and the noun peripheral." (Chafe 1970 : 96) Several convincing arguments in favour of this view (Chafe 1970 : 96 - 8), have determined the final selection of verb centrality as the starting point for our further analysis. Moreover, it seems to be a particularly appropriate approach to the present study aiming at a semantic-syntactic classification of verbs, as selecting their environment on the basis of their feature indices, and not vice versa.

Consequently, the feature [+PERCEPTION] and the variables specifying the type of perception involved are present, as was mentioned above, in the indices of the verbs in 1 - 15, therefore distinguish them from other classes of verbs. Despite this common feature, however, the most apparent contrasts in the syntax and semantics of these verbs were already reflected in the three-fold subdivision (cf. Introduction). It has been based on the state/nonstate dichotomy advocated by Chafe (1970 : 99) as the primary criterion of the classification of verbs. Thus, following the standard procedures for distinguishing these two types of verbs, those in 1 - 15 are nonstate, simultaneously qualifying as subjects for further subdivision.<sup>6</sup> According to Chafe (1970 : 101) who somewhat expands the traditional grouping of verbs into state, process, and action verbs, there is still one more type, namely action-process verbs, which both involve a change in the condition of the nouns, their patients, and express what their agents do, i.e. they refer to process and action at the same time.

Having checked our corpus against Chafe's system, a striking consistency was revealed as to the [+process] feature shared by all 15 verbs in question. There are, however, some crucial differences between the previously formed subgroups, since the initial division was by no means accidental. Firstly, the examples of cognitive perception (1 - 5) contain typical process verbs in-

<sup>6</sup> For a more detailed discussion of verb classification, cf. Chafe (1970 : 99 - 102).



volving Experiencer, i.e. the NP undergoing the sensation, and objective, specifying the content of this sensation.<sup>7</sup> Secondly, the same type of process is referred to in 11 - 15, however, with the reservation that these are sentences requiring psych-movement, hence the order of noun phrases is reversed (cf. above and Rogers 1971, 1972). Thus, both cognitive and flip verbs, to follow Rogers' terminology, will contain the feature [+process] in their indices. Lastly, the verbs in 6 - 10 are, for the reasons stated above, assigned the feature [+process-action].

The selectional features of verbs in question established above determine the subsequent choice of nominal elements accompanying these verbs. There are two types of noun phrases involved in the perception process, i.e. an animate being undergoing or experiencing a sensation — hence the label Experiencer, assigned to it by case grammar (cf. Fillmore 1971 : 42; 1972 : 10; Cook 1972 : 17; 1973 : 56; Traugott 1972 : 34), and a person, object or phenomenon to affect one of the senses, traditionally called Patient (Traugott *ibid.*) or Objective (Fillmore *ibid.*; Cook 1972 : 43).

The case grammar terminology will not be, however, followed in our analysis. The framework of generative semantics constitutes a model more relevant to our further presentation. As Cook (1974 : 3 - 10) rightly noticed while juxtaposing case grammar and generative semantics, the two most striking differences between these theories consist in the labelling of the universals they employ and in the ordering of elements involved. The advocates of case grammar, as was mentioned above, view the deep (or semantic) structure of each sentence<sup>8</sup> as consisting of a verb (or predicate), accompanied by one to three noun phrases standing in a particular case relationship to this predicate. Each of these relationships is given an appropriate label, hence we get 5 basic cases: Agent, Experiencer, Benefactive, Objective, and Locative. The order of presentation is not random here, but it reflects the hierarchy the cases exist in, determining subject selection and other processes occurring within a sentence.

For our purposes, however, labelling of the elements in the semantic structure (cf. footnote 8), is of no importance whatsoever, since the entities involved in the perception process will be named according to the function they play. So, the generative semantics notation will be much more suitable for the present analysis due to its simplicity. Apparently, the semantic structure of each sentence (or predication), coinciding with its logical structure, contains a central verbal element (or predicate) being accompanied by one to three arguments (unlabelled noun phrases). Moreover, the ordering of the arguments characteristic of generative semantics seems also preferable here, since it re-

<sup>7</sup> On the analysis of the basic types of cases, cf. Fillmore (1971 : 42), Cook (1973 : 57).

<sup>8</sup> The controversy of deep vs. semantic structure is dealt with in Cook (1972 : 37 - 38).

flects the typical word order of English sentences, i.e. subject — (indirect object) — (direct object).<sup>9</sup>

The semantic analysis proper, carried out within the generative semantics framework, will proceed as follows. The control predicate being assigned the two features and one variable mentioned above must be abstracted from the predication according to the adopted notation, (cf. for example Cook 1974 : 3 - 4); it is then followed by arguments enclosed in brackets and properly ordered, (cf. above). The animate NP involved actively in or affected by the perception, will be given the label Percipient, and will contain in its index both its distinctive feature [+animate] and the feature accounting for its participation in process-action or process, respectively. The latter feature originally present in the predicate index triggers the selection of its arguments, hence is automatically mapped onto the Percipient's index, due to the transitivity of features.<sup>10</sup> However, it must be added that the initial position of this argument is, again, predicate-conditioned. Namely, in 1 - 10, where Percipient functions as subject, it is reflected in the semantic structure by its position following the verbal element. But, with flip verbs requiring the rearrangement of subject and object, it gets demoted.

Besides, there is always a person, an object, or a phenomenon to affect one of the senses, the only condition being its feature of perceptibility for a given sense, e.g. we cannot see a bird song or smell the stars. Hence, the argument called Percept from now on, is subject to only one restriction, i.e. the variable specifying the type of perception described, already present in the predicate index is automatically transmitted to the Percept's index. It is an essential condition for the sentence to be grammatical, since both the Percept and the predicate present in one predication refer to one particular kind of process, and the transitivity of features must take place again, (cf. footnote 10).

Finally, one more entity is to be mentioned here, i.e. the quality of the impression which, although absent from the predications with cognitive and active verbs, is a significant element complementing flip verbs, e.g.:

18. *This drink smells of whisky (to me)*  
*like whisky*  
*nice*  
*as if it were whisky*

As can be noticed above, it has four distinct surface realizations. This point, however, is not relevant here; it will be dealt with in Section 4, devoted to

<sup>9</sup> On the ordering of the elements in the generative semantics model, cf. Cook (1970 : 3 - 6).

<sup>10</sup> On the transitivity of features in predicates and their corresponding arguments, cf. Leech (1974 : 113).



syntax.<sup>11</sup> What is needed for semantic purposes is the idea of qualifying a given impression; that is why the feature Quality will be added to the semantic representation of flip verbs, taking the middle position in between the flip subject, i.e. Percept, and the flip object, i.e. Percipient.

2.2 At this point, the theoretical observations of 2.1. seem worth confronting with the English and Polish corpora, which will presumably provide some deeper insight into the semantics of the verbs of perception in the two languages, i.e. the suggested semantic representation will reveal its power, and the degree of its explanatory adequacy.

Let us consider the three groups of verbs: cognitive, active, and flip, respectively:

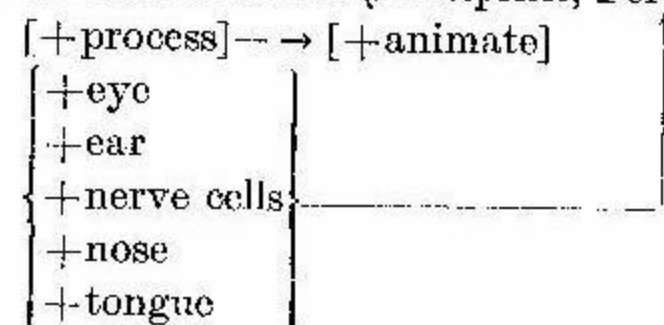
### 2.21 Cognitive verbs

- |   |  |
|---|--|
| 19. <i>I (can) see pink elephants</i>       | 19'. <i>Widzę białe myszki</i>             |
| 20. <i>I (can) hear strange noises</i>      | 20'. <i>Słyszę dziwne hałasy</i>           |
| 21. <i>I (can) feel the nail in my shoe</i> | 21'. <i>Czuję gwóźdź w bucie</i>           |
| 22. <i>I (can) smell the perfume</i>        | 22'. <i>Czuję perfumy (zapach) perfum</i>  |
| 23. <i>I (can) taste the spices</i>         | 23'. <i>Czuję korzenie (smak: korzeni)</i> |

According to our analysis, the semantic representation of the English verbs is arrived at in the following way:

24.  $P_{\text{perc.C}} \rightarrow \text{Pred} (\text{Arg}_1, \text{Arg}_2)^{12}$
- $\text{Arg}_1 \rightarrow \text{Percipient}$   
 $\text{Arg}_2 \rightarrow \text{Percept}$   
 $\text{Pred} \rightarrow \text{PERCEPTIONc}$

25.  $P_{\text{perc.C}} \rightarrow \text{PERCEPTIONc} (\text{Percipient}, \text{Percept})$



The rule reads: a predication with a perception predicate ( $P_{\text{perc.C}}$ ) is to be rewritten as:  $\text{PERCEPTIONc}$  (where the subscript C denotes a cognitive perception predicate whose centrality is marked by the adopted notation — cf. above, and the initial position it occupies) followed by two arguments enclosed

<sup>11</sup> Section 4. will discuss both the types of complements to flip verbs and their distribution.

<sup>12</sup> For the basic semantic rules involving predicate and arguments, cf. Cook (1974 : 3 - 6).

in brackets and ordered according to the function they play in the predication, i.e. the subject — Percipient preceding the direct object — Percept. The predicate is assigned two features: [-process] accounting for its nonstate nature, and the appropriate variable specifying the type of process involved, hence one of the elements enumerated in brackets is obligatorily chosen. The former argument,  $\text{Arg}_1$  having the feature [+animate] by definition receives also an additional transitive feature [+process] already present in the predicate index. Percept, on the other hand, is selected on the basis of its perceptibility for a given sense, thus the respective variable is automatically transmitted from the predicate index onto the Percept index.

The proposed semantic representation works neatly with English predications, however, when applied to Polish, it reveals two areas of contrast. Since neither of them has significant impact upon the discussed model, they will only be signalled here and dealt with more thoroughly in the relevant sections:

a) The Polish examples lack surface Percepts (here also subjects), due to the subject — deletion transformation obligatorily following the subjectivization rule in non-emphatic sentences.<sup>13</sup> However, this is a purely syntactic problem to be dealt with in Section 4, and no change has to be introduced to our graphic model, since it does not correspond to the surface, but to the semantic structure where both in English and Polish the subject is obligatorily present.

b) The other difference concerns the lack of one-to-one correspondence in the lexical realization of cognitive perception process in both languages (5 English verbs have only 3 equivalents in Polish). Again, this lexical aspect of the problem does not affect the semantic representation proposed here, hence it will be elaborated in the next section.

Having considered the surface differences between the English and the Polish corpora, both contrasts were proved irrelevant to our semantic model. Consequently, it reflects the semantics of cognitive perception predications in both languages, and encourages linguists to check more thoroughly the possible universality of such entities, as:  $\text{PERCEPTION}$ , Percipient, Percept, and the like.

### 2.22 Active verbs

- |   |                                      |
|---|--------------------------------------|
| 26' <i>I am looking at pink elephants</i>       | 26'. <i>Patrzę na białe myszki</i>   |
| 27' <i>I am listening to the strange noises</i> | 27'. <i>Słucham dziwnych hałasów</i> |
| 28' <i>I am feeling the nail in my shoe</i>     | 28'. <i>Wyczuwam gwóźdź w bucie</i>  |

<sup>13</sup> The subject deletion transformation is possible in Polish due to inflectional endings supplying all the necessary information about the subject, i.e. its number, gender, and case.

- 29' *I am smelling the perfume*      29'. *Wącham perfumy*  
 30' *I am tasting the spices*      30'. *Smakuje (próbuję) korzenie*

The corresponding semantic representation of these predications will only differ slightly from the previous one, i.e. the verb will be assigned, by definition, the feature [-|process-action|]:

31.  $P_{\text{perc.A}} \rightarrow \text{PERCEPTION}_A$  (Percipient, Percept)
- |           |   |          |
|-----------|---|----------|
| +process- | → | +animate |
| -action   |   |          |
| +eye      |   |          |
| +ear      |   |          |
| ....      |   |          |

Again, the model works in Polish, the two basic contrasts to be noticed between the equivalent structures of the two languages being of the same nature, as in the case of cognitive perception. Since, as was noticed above, those surface phenomena have no impact whatsoever upon the semantic representation, the latter is valid for both English and Polish predications expressing active perception, whereas the two divergent points will be discussed under appropriate headings.

## 2. 23 Flip verbs

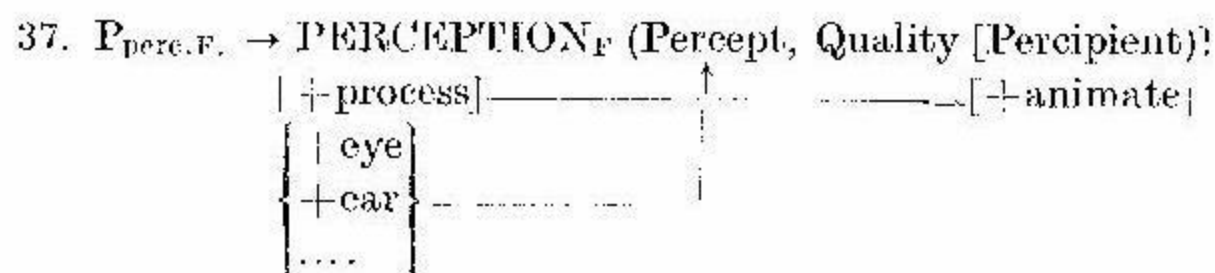
- The pink elephants look funny (to me)*  
*as if they were real*  
*like mice*  
*\*of plastic*
33. *The strange noises sound familiar (to me)*  
*as if they were jazz tunes*  
*like jazz*  
*\*of jazz*
34. *The nail in my shoe feels sharp (to me)*  
*as if it were metal*  
*like a hook*  
*\*of metal*
35. *The perfume smells sweet (to me)*  
*as if it were Russian*  
*like roses*  
*of roses*

36. *The spices taste hot (to me)*  
*as if they were oriental*  
*like cinnamon*  
*of cinnamon*
- 32'. *Białe myszki wyglądają (mi) śmiesznie*  
*jakby były prawdziwe*  
*jak myszy*  
*\*plastikiem*
- 33'. *Dziwne hałasy brzmią (mi) znajomo*  
*jakby były melodią jazzową*  
*jak jazz*  
*\*jazzem*
- 34'. *\*Gwóźdź w moim buciku czuję ostro*  
 a. *Gwóźdź w moim buciku wydaje (mi) się ostry*  
 b. *Odczuwam gwóźdź w moim buciku jako ostry*
- 35'. *Perfumy pachną (mi) słodko*  
*jakby były rosyjskie*  
*jak róże*  
*różami*
- 36'. *Korzenie smakują (mi) ostro*  
*jakby były wschodnie*  
*jak cynamon*  
*cynamonem*

The semantic representations of these verbs differ in three respects from what was proposed in figures 25. and 31. Firstly, the element of quality of perception, i.e. Quality, will have to be included as the additional argument, since it is not a two-place, but a three-place predicate, (cf. the above-discussed nature of flip verbs). Consequently, the ordering of the arguments must also be changed: Percept, the direct object in 19 - 23 and 26 - 30, takes over the subject role in 32 - 36 requiring psychmovement; hence, it should occupy the primary position in the semantic structure of these predications. Percipient, on the other hand, plays the role of an optional object, replacing the former direct object, thus it will appear as the last (and also enclosed in brackets, to account for its optionality) of the three arguments. The remaining one, i.e. Quality, will occupy the middle slot in the series accompanying the predicate, since the obligatory complementation of the flip perception predicate must be reflected in the semantic structure.

Apparently, the three modifications, i.e. introducing a new element, Quality, involving a subsequent change in ordering and the optionality of percipient, will result in the following semantic structure of psych-movement predications:





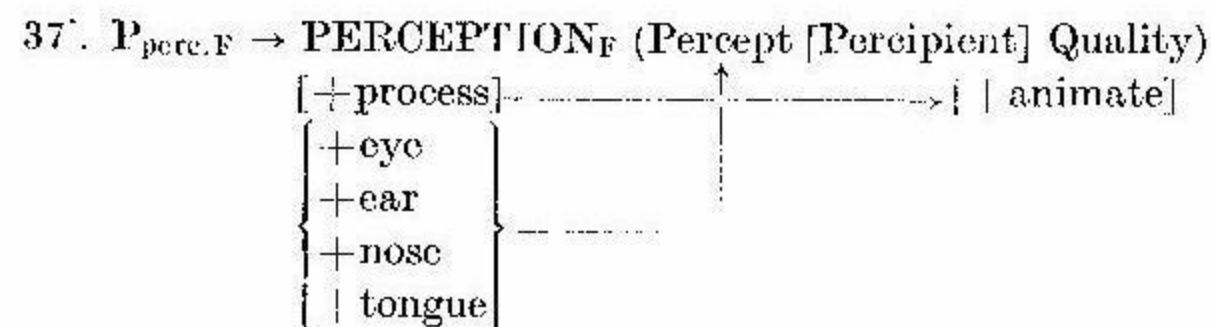
To prove the explanatory adequacy of this model for Polish corpus, the following areas of contrast between English and Polish examples will have to be considered:

a) distinct word order (in Polish, Percipients do not occupy the final position in the predication but are optional elements following the Predicate), hence proper rearrangements coinciding with the advocated ordering: subject, indirect object, direct object, will be introduced to the original graphic representation

b) Quality is expressed by adverb, not adjective, as in English, the other elements standing for this argument being of the same kind. Since it is a purely categorial difference, it does not affect semantics, and will be discussed under the heading of syntax.

c) there does not exist any acceptable Polish equivalent of the English predication with flip *feel* (cf. the ungrammaticality of 34'). The possibility of expressing this idea by some distinct syntactic and lexical means will be dealt with in the respective sections.

Consequently, the necessary changes introduced to the model will make it look something, like:



Notice the predicate index containing only four variables specifying the type of PERCEPTION, thus the non-existent Polish equivalent of *feel* is automatically excluded.

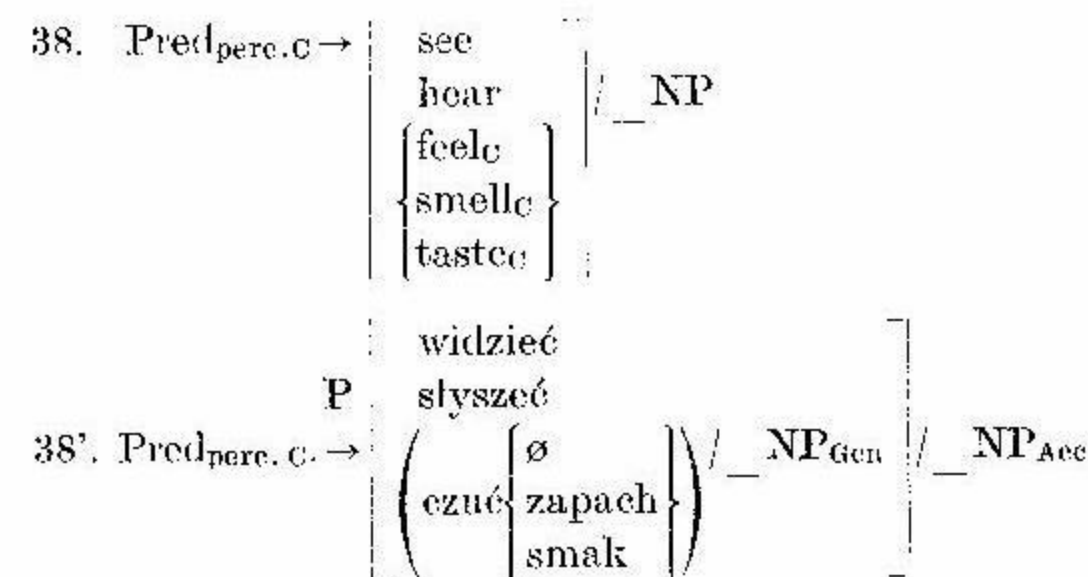
### 3. LEXICAL RULES

The semantic analysis carried out above has shed some light upon the possible lexical realizations of the semantic entities involved in the formation of predications with perception verbs. It has also revealed some facts about the relation of congruence which does not always hold between the equivalent

structures of English and Polish.<sup>14</sup> The lexical rules given below are based on these observations and aim at their systematization and formalization. For each type of predication, i.e. cognitive, active, and flip, respectively, the rules operating in English and Polish are specified, so as to show to what extent the relation of congruence holds between the equivalent perception predications in the two languages.

#### 3.1 Cognitive perception

Consider examples 19 - 23 and 19' - 23', as well as rule 25. in section 2.21.<sup>15</sup> The lack of one to one correspondence in lexical realizations of cognitive perception predicates in the two languages is apparent. Only *see* and *hear* have distinct equivalents in Polish, whereas the remaining three are expressed by one predicate *czuć*. Moreover, in the case of *smell* and *taste* Polish has another possible lexical representation, i.e. *czuć*+noun denoting the given sensation (*zapach* and *smak*, respectively). If the latter variant is selected, Percept is a noun phrase taking no longer the Accusative, but the Genitive case. Hence, the lexical rules for English and Polish, respectively, are of the following form:



Rule 38. reads: the cognitive perception predicate ( $\text{Pred}_{\text{perc.C}}$ ) is realized in English as either of the five bracketed verbs in the context /-NP, where NP is the surface equivalent of Percept, the second argument accompanying PERCEPTION<sub>c</sub> predicate, (cf. rule 25.) Rule 38'. is to be interpreted as follows: the cognitive perception predicate is given in Polish (the subscript P signalling it), such lexical realizations that *widzieć* corresponds to its English equivalent *see*, *słyszeć* to *hear*, whereas *feel*, *smell*, and *taste* are expressed by one Polish

<sup>14</sup> For the definitions of equivalence and congruence, cf. Krzeszowski (1967: 33) and Marton (1968: 54).

<sup>15</sup> Since the scope of this paper is limited to the discussion of the verbs of perception in English and Polish, their lexical realizations are of major importance here. Thus, only their impact upon the occurrence of congruence between equivalent predications will be analyzed. Therefore, the other semantic entities will not be considered at the moment.



item *czuć*, in the context of NP in the Accusative following the verb.<sup>16</sup> If, however, the optional element in parentheses is chosen, then *czuć* remains unchanged as the equivalent of *feel*, (since *czuć*+*o*=*czuć*), whereas the Polish lexical realizations of *smell* and *taste* are *czuć zapach* and *czuć smak*, respectively, the selected noun phrases automatically triggering the change of the Percept's case from Accusative to Genitive.

It may be concluded that only the Polish structures built in accordance with the rule:  $\text{Pred}_{\text{pred.C}} + \text{NP}_{\text{Acc}}$  are congruent with their English equivalents. One reservation, however, is to be made here, namely, the Polish predicate *czuć* comprises the meaning of three English perception predicates, i.e. *feel*, *smell*, and *taste*.

### 3.2 Active perception

Examples 26 - 30 and 26' - 30', as well as rule 31 (cf. 2.22) show that each English predicate has its distinct Polish counterpart coming from a distinct root that denotes given type of perception. In the case of *taste*, there are even two verbs equally possible to play the roles of its equivalents in Polish, i.e. *smakować* and *próbować*.<sup>17</sup>

Besides, the following points seem worth mentioning here:

a) since only two English predicates have different lexical realizations as compared to cognitive perception, i.e. *see* and *hear* being process verbs are replaced by their process-action counterparts *look at* and *listen to*, respectively, the remaining three: *feel*, *smell*, and *taste* will be distinguished from their homonyms by means of appropriate subscripts, e.g. *feel<sub>c</sub>* vs. *feel<sub>A</sub>*.

b) predications with *look at* and its Polish equivalent *patrzeć na* are congruent, since both predicates are of the form V+Preposition. This is not, however, the case with *listen to* which corresponds to Polish *szuchać* lacking any preposition, (the relation between Predicate and Percept is expressed by a distinct case, i.e. with *patrzeć na*, *czuć*, *wąchać*, and *smakować* (*próbować*) the NP following them is in the Accusative, with *szuchać* it is in the Genitive).

c) the two possible equivalents of English *taste*, i.e. *smakować* and *próbować*, although used interchangeably, differ slightly as to their status in Polish (the former is felt by the author to be a bit substandard or, at least regional).

These observations will be accounted for by the following rules for English and Polish, respectively (the notation left unchanged):

<sup>16</sup> The notation adopted here is a standard one, commonly used in TG, (cf. Jacobs and Rosenbaum 1970, and other TG textbooks). Thus, square brackets mean that only one element may be chosen at a time; moreover, it corresponds to the element that occupies the same position in the other pair of brackets.

<sup>17</sup> For a more detailed description of the roots of Polish perception verbs, cf. Grzegorek (1974: 57 - 60).

$$\begin{array}{l}
 39. \text{Pred}_{\text{perc.A}} \rightarrow \left[ \begin{array}{l} \text{listen to} \\ \text{look at} \\ \text{feel}_0 \\ \text{smell}_0 \\ \text{taste}_0 \end{array} \right] / \text{NP} \\
 \\
 39'. \text{Pred}_{\text{perc.A}} \rightarrow \left[ \begin{array}{l} \text{szuchać} \\ \text{patrzeć na} \\ \text{wyczuwać} \\ \text{wąchać} \\ \text{smakować} \\ \text{próbować} \end{array} \right] / \left[ \begin{array}{l} \text{NP}_{\text{Gen}} \\ \text{NP}_{\text{Acc}} \end{array} \right]
 \end{array}$$

Rule 39. reads: the active perception predicate is rewritten in English, as either of the verbs: *listen to*, *look at*, *feel<sub>A</sub>*, *smell<sub>A</sub>* or *taste<sub>A</sub>* followed by an NP. Rule 39. enumerates the corresponding lexical realizations of active perception in Polish, i.e. *szuchać* followed by the Genitive, *patrzeć na*, *wyczuwać*, and *smakować* or *próbować*, respectively (the latter five accompanied by an NP in the Accusative).

To recapitulate, it must be noted that for the reasons stated above, the relation of congruence holds between four pairs of equivalent English and Polish active perception predicates, *listen to* and *szuchać* excluded.

### 3.3 Flip perception

Examples 32 - 36 and 32' - 36' followed by rules 37 and 37' have revealed that Polish has no acceptable counterpart of the English flip perception predicate *feel<sub>F</sub>*, unless either the sentence is rephrased (hence having no more the structure of a flip predication), or a completely different predicate is used; for example the verb *wydarwać się* which is the literal equivalent of English *seem*, thus the meaning changes to some extent — cf. 34. a. and b. The apparently complex issue of the surface realizations of Quality will not be discussed here since, as was noted in 2.23, it is of categorial, not lexical nature, hence belongs to syntax (Section 4).

Consequently, the lexical rules operating on English and Polish flip perception predicates can be formulated, as follows:<sup>18</sup>

$$40. \text{Pred}_{\text{perc.F}} \rightarrow \left[ \begin{array}{l} \text{look} \\ \text{sound} \\ \text{feel} \\ \text{smell} \\ \text{taste} \end{array} \right] / \text{E}$$

<sup>18</sup> The context is not relevant to the present analysis since as has already been noted, the problem of Complement will be discussed in the next section as a purely categorial phenomenon.



40'. Pred <sub>perc.F</sub> →	<table style="border-collapse: collapse;"> <tr> <td style="padding-right: 5px;">P</td> <td style="border-left: 1px solid black; padding-left: 5px;">wyglądać</td> </tr> <tr> <td></td> <td style="border-left: 1px solid black; padding-left: 5px;">brzmieć</td> </tr> <tr> <td></td> <td style="border-left: 1px solid black; padding-left: 5px;">o</td> </tr> <tr> <td></td> <td style="border-left: 1px solid black; padding-left: 5px;">pachnieć</td> </tr> <tr> <td></td> <td style="border-left: 1px solid black; padding-left: 5px;">smakować</td> </tr> </table>	P	wyglądać		brzmieć		o		pachnieć		smakować
P	wyglądać										
	brzmieć										
	o										
	pachnieć										
	smakować										

Rule 40. reads: a flip perception predicate is realized in English as either of the verbs: *look*, *sound*, *feel*, *smell*, and *taste* which have, according to rule 40', the following equivalents in Polish: *wyglądać*, *brzmieć*, *o*, *pachnieć*, and *smakować*, respectively. Thus, only with four perception predicates of the flip type does the relation of congruence hold between the English and Polish predications.

#### 4. SYNTACTIC RULES

The description of syntax of the verbs in question both in English and Polish will be confined to some remarks complementing and systematizing the information already supplied above. Moreover, some syntactic rules illustrating the derivational history of sentences with verbs of perception will be proposed for both languages.

##### 4.1 Cognitive and active perception verbs

These two groups of verbs will be analyzed simultaneously since, as it follows from the examples 19 - 23 and 26 - 30, as well as their Polish equivalents, the basic syntactic patterns of these structures differ only in two respects:

a) the optional choice of the modal auxiliary *can* (Aux) with the former, and the lack of it with the latter verbs, cf. footnote 1.

b) the formerly discussed distinct lexical realizations of the perception predicates, (3 homonymous forms: *feel*, *smell*, *taste* expressing both cognitive and active perception, versus cognitive *see* and *hear*, the active counterparts of which, i.e. *look at* and *listen to* come from distinct roots and are followed by prepositions) cf. 3.1 and 3.2).

This does not, however, affect the syntactic component which, for the economy of presentation is formulated as one rule deriving the syntactic structures of sentences with both groups of verbs, (again, the standard notation of TG is used here):<sup>19</sup>

$$\begin{array}{l}
 \text{E} \\
 41. S \rightarrow NP_1 + VP + NP_2 \quad \text{a) } VP \rightarrow (\text{Aux}) MV \\
 42. S_{\text{perc. C}} \rightarrow NP_j + \left\{ \begin{array}{l} (\text{can}) V_C \\ V_A \end{array} \right\} NP_2 \quad \text{b) } MV \rightarrow \left\{ \begin{array}{l} V_C \\ V_A \end{array} \right\}
 \end{array}$$

<sup>19</sup> No categorial rules rewriting NP will be given here as irrelevant to the discussion which is confined to verbs of perception only.

While confronted with the Polish corpus, 41. still derives grammatical structures. However, the lack of modal auxiliary preceding the verb must be reflected in categorial rules, thus a) requires a change in Polish:

a)' VP → MV, hence:

$$42'. S_{\text{perc. C}} \xrightarrow{\text{P}} NP_1 \left\{ \begin{array}{l} V_C \\ V_A \end{array} \right\} NP_2$$

It is to be noted here that no more amendments will have to be introduced to the syntactic rules deriving deep structure (or rather syntactic structure which is subordinated to semantic structure) representations of Polish sentences with cognitive and active verbs. The lack of surface subjects in non-emphatic Polish sentences (cf. 2.21 and footnote 13), is due to an obligatory transformation operating on terminal strings, and the discussion of all the stages of the derivational history of the sentences in question is beyond the scope of this paper. Besides, this very transformational rule is of universal value in Polish, so this fact may be only signalled here, the present analysis confined to the formation of the syntactic representations, as the intermediate stage between the semantic structures of predications and their final surface structures.

##### 4.2 Flip verbs

Sentences with flip perception verbs pose a number of problems for the construction of syntactic rules accounting for their derivation:

a) the order of categories is changed (NP<sub>2</sub> occupying the subject position, whereas NP<sub>1</sub> is an optional element preceded by a preposition *to* and standing in the final position)

b) the verbs are followed by complements expressed in English by means of an adjective, prepositional phrase of the structure *of+N*, an unreal conditional clause *as if+pronoun+were*, or a comparative construction *like+N*, (cf. 2.23). However, not all complements can follow each of the flip verbs, i.e. only *smell<sub>F</sub>* and *taste<sub>F</sub>* take all of them; the three remaining ones, *look*, *sound*, and *feel<sub>F</sub>* form ungrammatical sentences while followed by *of+N*, so

c) two separate syntactic rules must be formulated for the respective groups of English verbs, the pattern 43 being the same:<sup>20</sup>

$$\begin{array}{l}
 \text{E} \\
 43. S_{\text{perc. F}} \rightarrow NP_2 + V + \text{Compl. } (to + NP) \\
 44. S_{\text{perc. F}} \rightarrow NP_2 \left\{ \begin{array}{l} \text{look} \\ \text{sound} \\ \text{feel}_F \end{array} \right\} \left\{ \begin{array}{l} \text{Adj.} \\ \text{Cond. Cl.} \\ \text{like} + NP \end{array} \right\} (to + NP_1)
 \end{array}$$

<sup>20</sup> Categorial rules are not repeated here as they remain the same for all types of verbs under discussion.



$$45. S_{\text{perc.F}} \rightarrow NP_2 \left\{ \begin{array}{l} \text{smell}_F \\ \text{taste}_F \end{array} \right\} \left\{ \begin{array}{l} \text{Cond. Cl.} \\ \text{Adj.} \\ \text{like} + \text{NP} \\ \text{of} + \text{NP} \end{array} \right\} (\text{to} + \text{NP}_1)$$

The Polish examples exhibit some areas of contrast as compared to their English equivalents. Firstly, their optional flip object, if chosen, obligatorily follows V and is then expressed by MP in the Dative,<sup>21</sup> whereas in English it occupies the final position in S. Secondly, there is one categorial difference to be mentioned here. The Polish flip verbs never take adjectives as their complements, the same idea being conveyed by adverbs. Finally, all remaining complements have exactly the same distribution in both languages, including the *of*+N phrase expressed in Polish by noun in the Instrumental that can complement only the Polish equivalents of *smell* and *taste*, i.e. *pachnieć* and *smakować*, respectively. Finally, as has been noted above, *feel* has no corresponding flip verb in Polish, hence the rules will take into account only four of them, rule 43. being also changed accordingly:

$$43'. S_{\text{perc.F}} \rightarrow NP_2 + V(NP_1) \text{ Compl.}$$

$$44'. S_{\text{perc.F}} \rightarrow NP_2 + \left\{ \begin{array}{l} \text{wyglądać} \\ \text{brzmieć} \end{array} \right\} (NP_{1\text{Dat.}}) \left\{ \begin{array}{l} \text{Adv.} \\ \text{Cond. Cl.} \\ \text{jak NP} \end{array} \right\}$$

$$45'. S_{\text{perc.F}} \rightarrow NP_2 + \left\{ \begin{array}{l} \text{pachnieć} \\ \text{smakować} \end{array} \right\} (NP_{1\text{Dat.}}) \left\{ \begin{array}{l} \text{Adv} \\ \text{Cond. Cl.} \\ \text{jak NP} \\ \text{N}_{\text{Instr.}} \end{array} \right\}$$

To recapitulate, it must be emphasized that the present paper is by no means exhaustive, nor does it give any complete system of rules or a consistent theory for the analysis of the verbs of perception in English and Polish. The author's aim has been to show how the idea of the perception process is expressed in both languages and how the two linguistic realizations compare semantically, lexically and syntactically. Also, the tentative rules suggested above to account for the formation of the respective components were intended to point to the possible existence of some abstract entities involved in the perception process and common for both languages. The analysis has revealed that further investigation of elements like: Percipient, Percept, etc. which presum-

<sup>21</sup> There is also a possibility of expressing the flip object in Polish by means of a prepositional phrase *według mnie*, i.e. *in my opinion*. Then, it may be placed not only after V, but also (as it is the case with English sentences), at the end of S, in the post-complementizer position, cf.:

*Te róże pachną mi (według mnie) słodko*  
vs. *Te róże pachną słodko według mnie.*

ably are also shared by some other languages, may contribute to the study of semantic universals. Finally, being a contrastive study, the afore-mentioned remarks are aimed at revealing areas of contrast as well as similarities and the relation of congruence holding between the English and Polish corpora. Again, many common points have been discovered in this respect, since quite a number of Polish structures are, if not congruent, then similar to their English counterparts.

## REFERENCES

- Bach, E., Harms, R. (eds). 1968. *Universals in linguistic theory*. New York: Holt, Rinehart and Winston.
- Chafe, W. A. 1970. *Meaning and the structure of language*. Chicago: University of Chicago Press.
- Cook, W. A. 1972a. „A set of postulates for case grammar”. *Language and linguistics working papers* 4. 35 - 49.
- Cook, W. A. 1972b. “A case grammar matrix”. *Language and linguistics working papers* 6. 15 - 48.
- Cook, W. A. 1973. “Covert case roles”. *Language and linguistics working papers* 7. 5a - 82.
- Cook, W. A. 1974. “Case grammar and generative semantics”. *Language and linguistics working papers* 8. 1 - 29.
- Davidson, D., Harman, G. (eds). 1972. *Semantics of natural language*. Dordrecht: D. Reidel.
- Fillmore, C. 1968. “The case for case”. In Bach, E. and Harms, R. (eds). 1968. 1 - 88.
- Fillmore, C. 1971. “Some problems for case grammar”. In O'Brien, R. J. (ed.). 1971. 35 - 56.
- Fillmore, C. 1972. “Subjects, speakers and roles”. In Davidson, D. and Harman, G. (eds). 1972. 1 - 24.
- Jacobs, R., Rosenbaum, P. (eds). *Readings in English transformational grammar*. Waltham, Mass.: Ginn and Company.
- Krzyszowski, T. 1967. “Fundamental principles of structural contrastive studies”. *Glottodidactica* 2. 33 - 39.
- Leech, G. 1971. *Meaning and the English verb*. London: Longmans.
- Leech, G. 1974. *Semantics*. London: Penguin.
- Lipińska, G. 1974. *Semantics*. London: Penguin.
- Lipińska-Grzegorek, M. 1974. *Some problems of contrastive analysis: sentences with verbs and nouns of sensual perception in English and Polish*. Adam Mickiewicz University unpublished doctoral dissertation.
- Marton, W. 1968. “Equivalence and congruence in transformational grammar”. *SAP* 1. 53 - 62.
- O'Brien, R. J. (ed.). 1971. *22nd Annual Round Table. Linguistics: developments of the sixties - viewpoints for the seventies*. Washington, D. C.: Georgetown University Press.
- Palmer, F. R. 1966. *A linguistic study of the English verb*. London: Longmans.
- Postal, P. 1971. *Cross-over phenomena*. New York: Holt, Rinehart and Winston.
- Poutsma, H. 1926. *A grammar of Modern English. Part II; The parts of speech. Section II*. Groningen: P. Nordhoff.
- Rogers, A. 1971. “Three kinds of physical perception verbs”. *CLS* 7. 206 - 223.
- Rogers, A. 1972. “Another look at flip perception verbs”. *CLS* 8, 303 - 316.
- Traugott, E. C. 1972. *The history of English syntax*. New York: Holt, Rinehart and Winston.