

## STRESS IN ENGLISH AND POLISH — AN INTRODUCTION TO A CONTRASTIVE ANALYSIS

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The aim of this paper is to provide a general theoretical framework for an exhaustive contrastive analysis of stress patterns in English and Polish. Consequently, the possible pedagogical implications of the analysis in question will be no more than signalled, which does not mean that the more utilitarian approach is disregarded on principle. The apparent disregard arose from the obvious fact that practical conclusions can only be subsequent to a careful comparison of scientific descriptions of the languages studied, or of selected areas of their structure, in this case of an aspect of English and Polish sound structure. \*

To make this kind of comparison possible it is essential that the general framework should be *uniform*, i.e. that it should consist of precisely formulated principles and processes which will yield as final products parallel scientific descriptions (of the languages considered) comparable in the sense that they will be stated in terms of the same or comparable categories, features, and sets of relations.

It seems that the condition of "uniformity" is most adequately and consistently met by the transformational generative (TG) theory. As a basis for a contrastive study TG grammar is found superior to alternative models of language description for two main reasons:

(1) as the most ambitious attempt at developing a general "theory of natural language as such" (Chomsky and Halle 1968 : 4), it seeks to provide language-independent principles of organization of a grammar and to determine sets of universal elements (classes, categories, features);

(2) as a formalized theory of language description, based on an alphabet of

unambiguously interpreted symbols and notational devices, it strives to formulate statements which are not only precise and explicit but which, through constant verification and modification, may become the simplest optimal interpretations of linguistic facts (linguistically significant generalizations).

The description of a particular language based on the principles given above is essentially a formalized grammar constructed on the basis of an inventory of formal and substantive universals, provided by the general theory. In this way, although the grammars of, say, English and Polish draw from this inventory in different, language-specific ways, they are, thanks to rigorous notational conventions, comparable in so far as it is possible to state (informally, at this point) that a given element (class, feature, rule) of English

$$\left. \begin{array}{l} \text{does (not) occur} \\ \text{does (not) function} \\ \text{is (not) (equivalent) (congruent) with a given element} \end{array} \right\}$$

in Polish and vice versa. Moreover, knowing the general principles of linguistic structure, it may be possible to state whether the occurrence (equivalence, congruence) of element X in English and Polish is conditioned by the fact that X is an essential property of all languages (property of language), or is accidental, or is due to their common, though remote, origin. Such statements may prove to be of extreme importance for the preparation of teaching materials.

On the other hand, contrastive analysis and parallel descriptions prior to it may bring to light hitherto unrevealed "universal principles", or they may modify and even invalidate some of the proposals of the general theory. This brings another dimension into a contrastive study: it does not consist merely of "putting theory into practice", but also acts as a filter to the theory. This aspect of contrastive studies will not be considered in this study.

The above statements suggest that the TG approach is the most adequate basis for inter-language studies. It has, indeed, been found successful in contrastive analyses of syntactic problems (see Marton 1968 and 1971). It remains to be seen whether it is equally well equipped for a contrastive analysis of phonological problems.

The argument presented below derives its basic concepts from the phonological theory proposed by Chomsky and Halle (1968), though it has also been influenced by the other works cited. Against this sophisticated background many links in the reasoning may appear strikingly primitive and indulging in truisms. It is hoped, however, that relating things "ab ovo" may both add to the clarity of exposition and reveal the importance of some undeservedly obscured factors.

The major principle underlying the discussion is that of establishing a general framework (in terms of rules, symbols and conventions) within which stress contours of any language may be analysed. On the other hand, some statements will refer directly to English and Polish in order to determine, even if superficially and tentatively, whether the processes governing stress placement in the two languages may be compared only in a very general way or whether they are convergent also at points of detail.

Let us consider a pair of congruent (term used after Marton 1968 : 58) sentences, one in English.

(1) John knows this house.

one in Polish,

(2) Jan zna ten dom.

Suppose we use the syntactic component of TG grammar (of English and Polish respectively) to generate syntactic descriptions of (1) and (2) with syntactic surface structures which are labelled bracketings of strings of formatives (notation after Chomsky and Halle 1968):

(3)  $[s[_{NP}[_{N}John]_N]_{NP} [_{VP}[_{V}know]_V af]_V [_{NP}[_{D}this]_D]_{NP} [_{N}house]_N]_{NP}]_{VP} ]_s$

(4)  $[s[_{NP}[_{N}Jan]_N]_{NP} [_{VP}[_{V}znać]_V af]_V [_{NP}[_{D}ten]_D]_{NP} [_{N}dom]_N]_{NP}]_{VP} ]_s$

The lexical and grammatical formatives, here presented in abbreviatory orthographic notation, are in fact complexes of syntactic, semantic and phonological features, provided by the lexicon of the grammar. Phonologically, each formative is a string of segments, which constitutes its "lexical representation". Furthermore, each segment is itself a complex of phonetic features taken from a universal set. Since a lexical representation of a given formative specifies only its inherent (idiosyncratic) phonological properties, only those features of its segments are provided which are not determinable by phonological rules. Thus a lexical representation is really an abstract form consisting of incompletely specified "archi" segments. The rules of the phonological component convert such underlying forms into fully-specified phonetic representations: "directives" for ideal phonetic interpretation of formatives and larger utterances.

In order to enter the phonological component whose rules assign ideal phonetic representations to (3) and (4), the latter must first be converted by certain readjustment rules into "phonological representations" — such modifications of syntactic surface structure as are "appropriate for the rules of phonological interpretation" (Chomsky and Halle 1968 : 9). And so certain readjustment rules will convert the grammatical formative *af*, introduced by syntactic rules, into phonological elements, ultimately giving  $[_{V}knows]_V$  in (3) and  $[_{V}zna]_V$  in (4). Otherwise, we can assume that the lexical representations of (3) and (4) are identical with their respective phonological representations.

Let us now make the following assumption:

(I) From the set of phonetic features universally available for determining the possible phonetic representations of utterances of any human language, both English and Polish utilize only segmental non-prosodic features.

In accordance with this assumption the phonological components of the grammars of English and Polish will ultimately convert (3) and (4) into:

(5) dʒɔnnɜwzʃishaws

(6) janznatendom<sup>1</sup>

i.e., there will be a simple temporal succession of segments bound by silences at both ends for no other reason than that nothing precedes and nothing follows it. Now in writing, "the secondary medium of language", representations like "Johnknowsthishouse" and "Janznatendom" are possible: there are no serious physical constraints on typing (or even handwriting) whole pages in this fashion, though, of course, their intelligibility would be impeded and ambiguities would undoubtedly occur, e.g. of the sort used in puns or *calembours* (English: *aniceman*, *seethemeat*, *readjustthis*; Polish: *czytrzymasz*, *odstudni*, *kilowaty*), at sentence boundaries, etc. But, to paraphrase Chomsky and Halle (1968 : 10), speakers, unlike writers, *do* run out of breath; there are certain universal constraints on the way a sentence can be uttered or joined with other sentences in any language. Perhaps (5) and (6) could, thanks to their shortness, be uttered in one breath (though surely not without some *stress* and *pitch* characteristics), but any longer stretch of speech needs *pauses*. The question now arises whether these pauses are only features of performance, i.e., whether they occur whenever a particular speaker happens to run out of breath. This is certainly not true. Pauses are universal phonetic features, determined by language-independent physiological factors, but their duration and distribution are determined by the phonological and syntactic structure of particular languages (though, of course, "pauses of performance" may cut across "pauses of competence"). At this point the important questions are how are pauses realized in English and Polish and whether the two languages are comparable "pausewise".

The most meticulous scansion possible seems to insert pauses in (5) and (6) in the following way:

(7) //dʒɔn/nɜwz/ʃis /haws//

(8) //jan/zna/ten/dom//

("/" — a shorter pause, "//" — a longer pause, before and after (5) and (6) when pronounced in larger pieces of discourse<sup>2</sup>; "longer" and "shorter" are impressionistic, relative terms, not absolute, physically constant ones).

<sup>1</sup> Transcription for both English and Polish is that of Jassem 1971.

<sup>2</sup> Possible "machine-made" intersegmental pauses are disregarded here (see Cygan 1971: 17).

It appears that the congruence of the sentences extends to pause division. Also, there is a similarity in the substance and use of the suprasegmental prosodic characteristics of (7) and (8), which, though denied any existence in Assumption I, empirically refute its value. Utterances cannot do without prosodic features any more than they can do without pauses. In fact, there exists a close relationship between these phenomena, the nature of which will be investigated (rather superficially) below. In any case, for all purposes, Assumption I is untenable; perhaps (5) and (6) could be produced by speech-synthesizers, but it is doubtful whether a longer stretch of such "talk" would be understood.

Let us put forward another assumption:

(II) Apart from segmental features, both English and Polish make use of pauses and prosodic features associated with syllables of their utterances: pauses occur at syllable boundaries and prosodic features use syllables as the units over which they function.

Assumption II appears to be correct, at least for (7) and (8). The empirically established pauses (artificial perhaps, but permissible) occur between groups of segments which in English and Polish are termed syllables.

Since the problem of the syllable is not central to this study, let us mention only briefly those facts concerning the syllable, which are relevant to the study of pauses and prosodic features:

(a) phonetically, the division of utterances into syllables is language-independent, determined by the respiratory processes involved in speech-production. The stream of air to be modulated by the speech organs is exhaled from the lungs (or inhaled in some languages) rhythmically, in a series of chest-pulses (Abercrombie 1965 : 17; Hockett 1958 : 64). Each chest-pulse correlates with a phonetic syllable which consists of a peak (vowel or sonorant which renders the chest-pulse audible and so is an indispensable part of a syllable) and of optional consonantal margins. There are as many phonetic syllables in an utterance as there are syllable peaks (nuclei). Phonetic syllables are the smallest units of speech that can be uttered in isolation i.e. between "/" and "//" pauses (see Note 2);

(b) phonologically, syllable-division and -structure are language-specific. Each language puts specific constraints (which must be accounted for in its grammar) on the number of segments and on the way they are combined to form syllables of that language (i.e. what segments or groups of segments can constitute peaks and margins).

The syllable-division of (7) and (8) is based on the native speakers' knowledge of the constraints mentioned in (b). Thus, the syllable in these representations are phonological syllables of English and Polish respectively.

Though the segments constituting (7) and (8) are different, the number of pauses and syllables is the same: their *rhythm* is identical. It is a syllable-timed rhythm (spondaic), based on the isochronous occurrence of syllable peaks:

(9) // ˘ | ˘ | ˘ | ˘ //      (10) // ˘ | ˘ | ˘ | ˘ //

(9) and (10) are not, however, absolutely adequate representations: they do not account for the fact that the last syllable of (7) and the first of (8) are more strongly *stressed*, more prominent than all the others, this prominence being due to greater energy of articulation (perceived as greater loudness) and to pitch movement of different nature and direction from that of the remaining syllables. (7) and (8) should then be interpreted as follows:

(11) | ˘ | ˘ | ˘ | ˘ //      (12) // ˘ | ˘ | ˘ | ˘ //

If the grammatical descriptions of English and Polish were based on (syllabized interpretations of) sentences like (1) and (2), the phonological component of the grammars would be very uncomplicated indeed. The underlying lexical (phonological) representations (3) and (4) would differ only insignificantly from phonetic representations, readjustment rules would substitute [s...]<sub>s</sub> brackets by // pauses, erase all labelled bracketing within the sentences and eliminate the affix. A rule of phonology would insert / pauses at syllable boundaries, another rule would assign the feature "nuclear (sentence) stress" to the vowel of the last syllable in English and to the first in Polish. Stress would then be a redundant phonetic feature, auxiliary (together with pitch) to the pause determining sentence boundaries.

Though such a phonological component might, perhaps, be adequate for the Tswana language (cf. Jones 1962 : 136), it would assign correct phonetic representations only to an extremely limited number of English and Polish sentence-types (spoken quite unnaturally, at that). As it happens, neither in English nor in Polish are the stress-, pitch- and pause-assignment rules so directly determined by the syllable count as would appear from (1) and (2), though every element to which they apply must consist of integers of syllables. Assumption II will, therefore, have to be modified.

It may be seen from the preceding paragraphs that the features "pause", "stress" and "pitch" are not assigned to utterances independently of one another. Since, however, stress is the feature upon which the attention of this study is to be focused, the other two will not henceforth be considered *suo lege* but rather in so far as they are indispensable for elucidating problems involving stress.

Thus the next assumption to be made will directly refer to stress only:

(III) Both in English and in Polish the degree of stress assigned to particular syllables of an utterance is determined by the surface structure of that utterance.

Though intuitively felt to be correct, Assumption III, in its present formulation, is too general to provide a deeper insight into the nature of stress in the two languages or into general principles pertaining to it in the organization of the phonological component. Our immediate task will then be refining the assumption so that it may ultimately become a guiding principle for the analysis of stress.

In the analysis of (1) and (2) only two degrees of stress were mentioned: the "stronger" stress associated with a specific pitch movement and the "weaker" stress assigned indiscriminately to the other syllables of the utterances. That was only possible owing to surface structures which allowed syllabification. Actually, the stress contours of utterances in both languages are highly differentiated, though the differentiation is neither haphazard nor directly determined by physiological or physical factors. Both in English and Polish four to five degrees of stress are easily perceived (Chomsky and Halle 1968 : 116; Dłuska 1957 : 104); it is proposed in Assumption III that such observations reflect (imperfectly though adequately enough) the differentiations imposed by the syntactic organization of utterances and lexical items appearing in them (as well as some other, hitherto unspecified, factors).

If stress assignment is governed by the surface structure of utterances, it seems reasonable to expect that the complexity of stress contours increases with the complexity of the surface structure of particular utterances. Let us then begin with the simplest, monosyllabic utterances, such as English *Stop* or *Yes* and Polish *Stój* or *Tak*<sup>3</sup>. Here, both for English and for Polish utterances, no matter what their structural description, the following rule is valid:

"In monosyllables, the vowel receives primary stress" (Chomsky and Halle 1968 : 16).

As there is no other syllable which could bear a "non-primary" stress, the use of the modifier "primary" does not seem justified. However, the *only* stress of monosyllables is comparable to the primary stresses of polysyllabic utterances in so far as both are associated with a specific pitch movement.

As soon as two-syllable utterances are considered, the rules of the placement of primary and weaker stresses must depend on the information provided by the surface structure representations of such utterances, as is best exemplified by contrastive pairs like the famous English *black bird* (NP) vs *blackbird* (N) or Polish *na bój* (PP) vs *nabój* (N)<sup>4</sup>.

To account for this dependence (and for some other phonological processes)

<sup>3</sup> Actually any syllable (in both languages) can form an utterance; even such ones as are not ordinarily "stressed" or capable of appearing in isolation in English, e.g., to a question "Did you say 'allusion' or 'illusion'?" it is possible to answer "[æ]", according to certain phonological principles which cannot, at this point, be discussed in full.

<sup>4</sup> But cf. prepositional phrases like *na wieś* where the preposition is stressed; such and similar forms are historically motivated.

Chomsky and Halle propose the general principle of a "transformational cycle" in phonology, according to which some rules of the phonological component (notably the stress assignment rules) are transformational rules "that apply in a cyclical manner, beginning with the smallest constituents of the surface structure and proceeding systematically to larger and larger constituents" (1968: 163). The last rule in each cycle erases the innermost labelled brackets; the maximal domain of the cyclical rule application is a "phonological phrase" (see p. 131 below). The actual stress assignment rules are language-specific: only the principle of the transformational cycle is assumed to be a linguistic universal. Chomsky and Halle have managed to explain a variety of problems involving stress on the basis of this principle<sup>5</sup>; statements and examples of Džuska (1957: 104 and 1947: 41)<sup>6</sup> seem to confirm that the stress contours of Polish are also based on this principle. Thus Assumption III may be made more precise by the addition of the reservation that the stress assignment rules of English and of Polish, determined by the surface structures of utterances in these languages, are rules of the transformational cycle, as defined by Chomsky and Halle 1968. There seems to be enough justification for accepting Assumption III thus modified as the basis for a detailed description of stress contours in English and Polish, which does not mean that all of the Chomsky-Halle principles must be slavishly followed (especially as they refer to very simple constructions).

Assumption III requires one more modification: it must be stated explicitly what kind of "surface structure" it is that determines the stress contours of utterances. If it is agreed that stress placement rules belong to the phonological component, then it can only be the *phonological* surface structure (according to what was said on p. 125). Thus it is imperative that readjustment rules (apart from other modifications) "prepare" the syntactic structure for the operation of stress placement rules. These readjustment rules cannot be omitted from the "detailed descriptions" to be made because, if it is assumed that they operate on strings generated by syntax, which for both English and Polish are analysed in terms of the same lexical and major categories, then their language-specific "interference" is crucial for understanding how and why differences and subsequent difficulties for learners arise. English and Polish share some of their readjustment rules concerning stress placement. For example, it appears, even from a superficial analysis, that the demarcation of utterances into phonologi-

cal phrases is on the whole identical in both these languages, i.e. a simple sentence = 1 phonological phrase, compound sentences are divided into phrases in the same way (e.g. before conjunctions, if present), appositional sentences or phrases receive the same treatment, etc.<sup>7</sup> Both in English and in Polish the phonological phrase is a unit of intonation, i.e., it contains one tone-bearing (as Catford put it, cf. 1966: 606) syllable, which is at the same time its primary-stressed syllable (this is in keeping with what has been said about the pitch characteristics of primary stresses). Hence our examples (1) and (2) are phonological phrases of English and Polish respectively, each having one tonic (nuclear) stress:

- (13) 2341    (14) 1324    (1 — primary-stressed syllable  
2 — secondary-stressed syllable, etc.)

The position of primary stress is different in English and in Polish; also, they form different patterns with the weaker stresses. Such differences are not only the result of the fact that the two languages have different cyclical rules of stress placement in phonology, but also of the specific analysis which readjustment rules provide for their utterances. In order to understand this important function of readjustment rules in modifying the syntactic surface structure for purposes of stress assignment within phonological phrases, it is necessary to introduce certain types of "boundaries", which are connected in a characteristic manner with "pauses" discussed earlier. It has been said that apart from segments the phonetic representations of utterances in English and Polish must contain pauses. It has proved inadequate for most utterances in the two languages to insert the pauses at syllable boundaries (cf. Assumption II). It is, therefore, reasonable to assume that pauses are not introduced by the phonological itself, but are realizations of certain sets of features — different for different pause-types but all including the feature [-segment] — which are already present in the phonological surface structure of utterances. A more scientific term used to name such sets of features is "boundary" or "junction"; the term "pause" is reserved for the possible phonetic actualizations of boundaries. The following kinds of boundary are important for stress placement rules<sup>8</sup>:

- (1) phonological phrase boundary (correlative to our //pause), which is introduced by readjustment rules;

<sup>7</sup> Naturally, the readjustment rules dividing utterances into phonological phrases have to be carefully formulated, which is beyond the scope and purpose of this paper. It should be mentioned, however, that these rules will have to account for certain performance factors (e. g. speed, register) and also for free variation.

<sup>8</sup> The formative boundary "+" is disregarded here because it cannot block the application of stress placement rules. It will, nevertheless, have to be considered in a detailed study, where the conversion of # into + in certain contexts influences stress rule application.

<sup>5</sup> In particular, they were able to demonstrate that the stress contours of English words, commonly held to be extremely irregular and unpredictable, can, in fact, be predicted from the underlying lexical representations of formatives and their organization in the surface structure if the principle of the transformational cycle is utilized.

<sup>6</sup> She mentions the "many-storoyed" pattern of stress contours and their gradation. Her statement that the stress contours of longer utterances reflect those of their parts is strikingly similar to that of Chomsky and Halle (1968: 15).

(2) word boundary # (correlative, in certain configurations, to our / pause), which operates within phonological phrases. It is introduced into syntactic surface structures as a result of a general convention: "The boundary # is automatically inserted at the beginning and end of every string dominated by a major category, i.e. by one of the lexical categories "noun", "verb", "adjective", or by a category such as "sentence", "noun phrase", "verb phrase", which dominates a lexical category" (Chomsky and Halle 1968: 366).

It appears from the convention that phonological phrase boundaries correlate with word boundaries associated with certain types of constituents (e.g. "S"). The function of readjustment rules in the demarcation of utterances into phonological phrases is the conversion of certain (specified) word boundaries into phonological phrase boundaries in order to delimit the domain of cyclical rule application. On the other hand, the readjustment rules have another important function, signalled above, in connection with the # boundary. Namely, proper modification of the syntactic structure within the phonological phrase, which is prerequisite for proper stress assignment in the phonological component, is to a considerable degree the result of the application of language-specific readjustment rules which:

- (1) delete # in certain positions
- (2) substitute # in certain positions
- (3) retain # in certain positions, to block undesirable phonological processes

Likewise, the readjustment rules eliminate, retain, or even shift certain labelled brackets (e.g. in the case of "proclitics" and "enclitics" of some lexical formatives) in order to ensure the correct application of the transformational cycle and also of other, non-cyclical, phonological rules. The importance of such modifications may be seen even from a superficial analysis of *ad hoc* examples; e.g. the presence of # prevents incorrect stress shift in words with affixes that are neutral in respect to stress placement: English: *teach* # *ing*, *happy* # *ness*; Polish: *poszli* # *byśmy*, *zabrali* # *ście*.

It seems that as far as stress is concerned the readjustment rules of Polish might eliminate the boundaries and labelled brackets far more radically than those of English (though this may not be quite true, as there are other aspects of phonology to consider). This is connected with the fact that the transformational cycle operating within the *word* (defined tentatively, after Chomsky and Halle 1968: 13, as a constituent by the configuration # # ... # # with no internal occurrence of # #, with no brackets involved as yet) is probably "shorter" in Polish than in English. This, in turn, may be caused by the fact that Polish has a "fixed" word stress, in the sense that primary and weaker stresses are assigned in the majority of cases automatically to certain syllables of the word, disregarding its internal structure with respect to both # and

labelled bracketing (but cf. compounds below). Thus, the transformational cycle operates on words after pre-cyclical rules within the words have been applied (if any), yielding ultimately forms with the primary stress on the penultimate syllable, tertiary stress (second strongest permitted in words) on the first syllable, if there are four or more syllables, and weaker stresses, unspecified at this point, on all the remaining syllables, e.g., *spokój*, *spokojny*, *zaspokoić*. There are exceptions that must be accounted for in the lexicon or, preferably, by the readjustment rules, e.g. *prezydent*, *matematyka*; also compounds in which the tertiary stress is assigned to that syllable which received primary stress in the first element of the compound, e.g. *szaroniebieski* vs. *dalekobieźny*, but cf. *Wielkanoc*, *zegarmistrz*, *Białystok*, compounds in which the second element is a monosyllable<sup>9</sup>.

In English, more frequently than in Polish, categorial features of words and the internal structure of complex forms are indispensable cues for stress assignment. Word stress can be assigned properly only when these cues are present in the phonological surface structure, e.g., they must be available to secure correct stress placement in *import* (N) and *import* (V) and in *photograph* vs. *photography* vs. *photographic*, etc. Chomsky and Halle (1968) provided the first insight into the system of rules that assign stresses to English words and also some of the rules that ensure proper stress placement. These must be included, elaborated and modified in a detailed description of stress patterns in English. It is quite possible that the "etymological" approach<sup>10</sup> to the study of English stress (largely unnecessary for Polish, it seems) may provide new insights into the discussion. Even at this point, however, it is possible to state that the English rules of word stress assignment and the readjustment rules pertaining to them exceed in number and complexity those of Polish. The phonological surface structure of Polish appears to be shallower than that of English and as there are no vowel reduction rules in Standard Polish accompanying stress assignment rules (as is the case in English), the underlying lexical representations of formatives may turn out to be less abstract than in English.

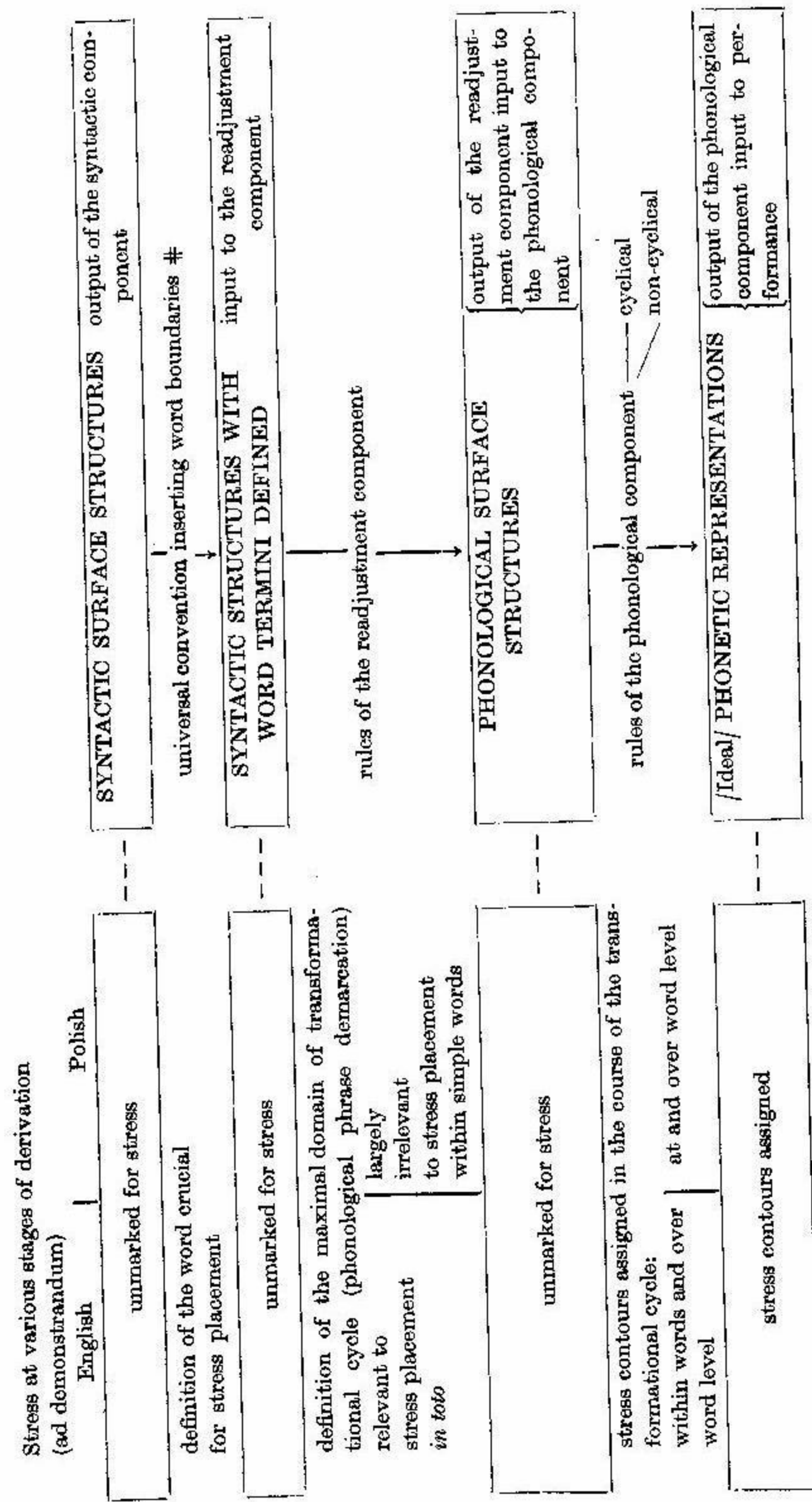
The problems of stress assignment in phonological phrases involving constituents larger than words (as defined tentatively) are relatively simple in both English and Polish as long as (1) emphatic stress is not involved, (2)

<sup>9</sup> Wierzchowska (1971: 219 ff.) suggests that in present-day Polish there is a tendency to reverse the positions of the stronger and weaker stresses, e.g. *językoznawstwo*.

<sup>10</sup> This, I believe, is the approach of Keyser and Halle in their "Evolution of Stress in English".

## DIAGRAM

A section of TG grammar in stress placement



the phonological phrase (sentence) is analysed completely into words that are lexical categories and include no proclitics or enclitics, i.e. non-lexical formatives, (3) the word order of Polish is "neutral", i.e. comparative to that of English. These conditions are, in fact, met in our examples (1) and (2), on the basis of which the general statement may be made that in English the tendency is to assign the nuclear stress (i.e. the primary tonic stress of the phonological phrase) to the primary-stressed syllable of the rightmost word of the phrase, while in Polish the tendency is to assign the nuclear stress to the primary-stressed syllable of the leftmost word (see (13) and (14)).

The more complex phrases, in which the three conditions are not met, have to be accounted for in the detailed descriptions of these aspects in English and Polish. It is proposed that such descriptions be made within the framework of TG theory, on the basis of a principle which is a modification of Assumption III, as elaborated above. Diagram on p. 134 summarizes in a systematic way all the aspects of the principle which have been discussed; moreover, it indicates the points at which the grammars of Polish and English are likely to differ/converge with respect to stress contours.

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