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LEXICAL PHONOLOGY AND THE ORGANISATION OF THE MORPHOLOGICAL COMPONENT

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1. Introduction

The idea that a generative grammar should include a word formation component has become commonplace since the beginning of the 1970's. However, there are several different ideas about the nature of word formation rules and, in relation to this, the internal organisation of the morphological component. In this article, views on this subject, expounded by Kiparsky (1982a,c) within the framework of LEXICAL PHONOLOGY, will be evaluated. The following three important questions will be dealt with in particular: should complex words be listed in the lexicon (section 2), can word formation rules be ordered extrinsically (section 3) and can roots function as input to word formation rules in English and Dutch?.(section 4)*.

2. The place of complex words in a competence theory

In morphology two different approaches can be distinguished concerning the place of complex words in the competence theory.

A. The dynamic approach:

The morphological component should define the class of *possible* complex words in a language; the lexicon only contains a list of simplex words and/or roots[1]. The class of *actual* complex words does not have to be defined by grammar. The question which complex words 'exist', and what idiosyncratic properties they may have is not a matter of grammar or competence, but a matter of performance. This approach is found explicitly in Beard (1981) and also, with some modifications, in Kiparsky (1982a,c).

B. The static/dynamic approach:

The lexicon comprises a list of simplex as well as actual complex *words*. Morphological rules are redundancy rules: they relate actual words to one another, but they can also be used creatively to form new complex words. This approach is that of Jackendoff (1975) and Aronoff (1976), Jackendoff emphasizing more strongly the redundancy rule function and Aronoff the creative function of morphological rules. Halle (1973) also presupposes a list of actual complex words.

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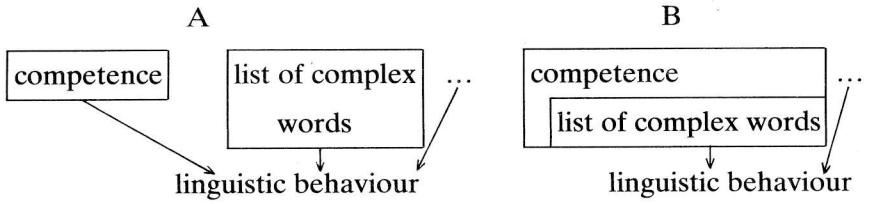
[1] 'Roots' are to be understood as 'bound morphemes which are no affixes', such as *dynam* in **dynamisch* 'dynamic' and **agres* in *agressief* 'aggressive' (cf. Bloomfield 1933:240). Contrary to stems, it is not sufficient for roots to be provided with the required inflexional elements in order to function as independent words, whereas it is also difficult to assign a meaning and/or a syntactic category to them.

The essential difference between the two approaches is that A assigns the notion of actual complex word to performance, whereas B accounts for this notion in the competence theory. Approach A does not deny that the individual speaker has stored complex words in his memory, but claims that this is in a way comparable to storing idioms, proverbs and sentences like *How do you do*? etc. in one's memory. Just as the existence of idioms does not imply that every output of syntactic rules should be entered in a list which is part of our competence, so we can say that this is true of the output of morphological rules. As a result, approaches A and B can be represented in the following scheme.



Approach A claims that information about actual complex words does not play a role in the application of the rules of grammar, whereas B maintains that it does.

I shall review now various arguments in favour of B. As we go along it will become apparent that a number of arguments are plausibility arguments, whereas others, in particular those relating to formal irregularities, have a more compelling nature.

2.1. The distinction between actual and possible complex words

The first argument in favour of entering complex words in the lexicon is that an adequate description should make a distinction between *actual* and *possible* complex words. This distinction is also known in the morphological literature as the distinction between *norm* and *system*.

Botha (1968:131-134) rejects this argument: the familiarity of a complex word should not be accounted for by the competence theory, but is rather a matter of performance.

The second possible counter-argument is that the distinction between norm and system is not correct. Provided that our analysis is careful enough, no 'accidental gaps' will remain in the lexicon, only 'systematic gaps'. The 'gaps' in the set of complex words are due to systematic restrictive principles which usually have a semantic or performative nature (Beard (1981:253), Plank (1980)).

The third counter-argument is that the boundary between actual and possible complex words is rather vague (Kiparsky 1982a). When may we regard a complex word as an actual complex word?

In my opinion, the first of the three counter-arguments is the strongest, at least in the sense that it is difficult to raise a compelling argument concerning this choice in the delimitation of the empirical scope of the competence theory. However, this view does not explain why, in contrast to syntax, '(un)familiarity' appears to play a role in word formation. See also Van Marle and Koefoed (1980:141) on this subject. They point out that, to the speaker's intuition, forming a new word means creating language, *expanding* the language system, whereas this does not apply to syntax.

The other two counter-arguments are not very strong. The second one is an unsubstantiated claim, whereas with respect to the third we can say that the fact that the boundary between possible and actual words cannot always be clearly drawn, does not imply that the distinction has thereby been rendered irrelevant.

2.2. Semantic irregularities

Aronoff (1976:18) turns the observation that complex words, once created, can have unpredictable semantic properties into a cornerstone of his theory. The very fact that newly formed words come into existence and are entered in the lexicon, turns them into independent linguistic signs and allows them to undergo semantic change.

The difficulty with this argument is that there are also *word groups* with an idiosyncratic meaning. But nobody would conclude from this that all products of syntactic rules 'exist', and consequently, can become idiomatic. Moreover, Aronoff's theory is inconsistent in this respect, because on p. 45 he assumes, quite conversely, that words are entered in the lexicon only *after* they have acquired at least one idiosyncratic property; this is a plausible assumption. It is precisely the idiosyncratic properties of complex words that force us to allow them a place in competence. In Halle (1973:6) too, the idiosyncratic properties of complex words form the reason for the distinction between 'potential' and 'actual' words.

Even if the existence of a word cannot be made a necessary condition for the occurrence of semantic change, yet the problem remains where the idiosyncratic meanings of a complex word should be recorded. For instance, the Dutch compound *klokhuis* 'lit. clock-house' has the unpredictable interpretation '(apple-/pear-) core'. The fact that this term is primarily related to apples and pears is no doubt a matter of knowledge of the world, but this argument can hardly be maintained with reference to the meaning of 'core'. Consequently, it is obvious that a lexical entry for the complex word *klokhuis* should be created where this idiosyncratic meaning can be recorded.

In approach A one is forced to postulate a list of complex words existing outside competence. This solution is not only unmotivated, it leads one to expect that idiosyncratic aspects of meaning have no interaction with mor-

phological rules in competence. However, it appears that this is the case (see section 3.2) and this is another reason why approach A is not desirable.

2.3. Formal (ir)regularities in complex words

Complex words may have unpredictable formal properties, as Botha (1968) has already demonstrated with respect to compounds in Afrikaans, which may contain an unpredictable linking phoneme. How artificial solutions may become when approach A is followed is shown by Kiparsky's (1982a) analysis of the word *obesity*, which constitutes a negative exception to the well-known English Trisyllabic Shortening Rule. In this word, the vowel of the second syllable is long instead of short, as the rule predicts (cf. *serēne – serĕnity*). Kiparsky's solution in this case is to mark the base word *obese* as a negative exception to the rule. When *obesity* is derived from *obese*, this negative exception feature is carried over and the Laxing Rule is blocked.

The artificiality of this solution[2] resides in the marking of a word as an exception to a rule by which it cannot even be affected, *obese* being a bisyllabic word. In addition, this description implies that if the form of a complex word is exceptional, all other words derived from the same base word are also exceptional in the same respect. This prediction is wrong. For instance, French has a rule of Learned Backing which changes the front vowel of a base word with the feature [+LEARNED] into a back vowel if the suffix is also [+LEARNED], e.g. *fleur-florale*. However, there are several complex words in French which, in spite of the fact that both the base word and the suffix are [+L], are not affected by the rule in question, such as the word *fleuriste* 'florist', like *florale* derived from *fleur* (Dell and Selkirk 1978:42-43). Dell and Selkirk insist that "...these words, but not the morphemes that compose them have to be marked with an exception feature [-Rule LB]" (p. 43).

In this respect, approach A also causes problems for the representation of verbs like *beloof* 'promise' and *geloof* 'believe' which behave synchronically like complex words. According to approach A these words would have to be derived by prefixation from a root *loof* which does not exist as an independent word. Apart from the difficulty to predict the meaning of these words, there are also problems as far as their formal properties are concerned. *Beloof* 'promise' is a verb which can occur with infinitives preceded by *om te* (*for to*) whereas this does not apply to *geloof* 'believe'. It is clear that such syntactic information cannot be coded on the root *loof*.

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[2] Cf. also Halle (1973:5) who makes the following observation about irregularities such as the long vowel in the first syllable of *obesity*. "...it appears somewhat forced to incorporate this information in the morpheme list or in the word-formation rules".

Conversely, words derived from an irregular simplex word can be regular, such as the weak verbs *stofznigen* 'vacuum' and *beeldhouwen* 'sculpture' derived from the strong verbs *zuigen* 'suck' and *houwen* 'hew'. Kiparsky (1974/1982b: 208-209) cites many instances of this phenomenon from several languages. Here too the complex words should be entered separately in the lexicon.

2.4. Productivity

If, as approach A implies, each complex word becomes available for lexical insertion only through the application of one or more morphological rules, it is impossible to account for the distinction between productive and non-productive rules, considering the fact that those rules which have become unproductive and therefore, according to approach B, only function as redundancy rules, still must apply, according to approach A, to derive words.

An apparent escape-hatch involves providing all simplex words which may be affected by unproductive morphological rules with a diacritic feature which is also mentioned by the rule in question. For instance, since Dutch has the deverbal nouns *komst* 'coming', *dienst* 'service' and *kunst* 'art', we can mark the verbs *kom* 'come', *dien* 'serve' and *kun* 'be able to' as taking the non-productive nominalising suffix *-st*. The point is now that complex words must also be marked in the same way, witness the following Dutch examples.

(1)	bekom 'to get'	bekomst 'fill'	*but*:	ontkom 'to escape'	*ontkomst
				voorkom 'to prevent'	*voorkomst
	ontvang 'to receive'	ontvangst 'receipt'	*but*:	vervang 'to replace'	*vervangst
				bevang 'to be seized'	*bevangst

Yet these words are not available for marking, because the lexicon only contains simplex words. This 'escape hatch' therefore is for approach A not a feasible one[3]. Consequently, approach A can only be maintained if non-productivity is regarded as part of performance, so that it becomes necessary to assign deverbal nouns like *buigst* 'bending', *schrijfst* 'writing' etc. to the class of possible but non-existent words and this conclusion is diametrically opposed to the morphological intuitions of native speakers of Dutch.

[3] Kiparsky (1982a:40) is aware of this problem: "By adopting this approach [i.e. admitting only simplex words in the lexicon] we make the very strong prediction that idiosyncratic marking for susceptibility to morphological processes should be concentrated in basic lexical entries". The data presented in (1) are clearly counter-examples to this claim.

2.5. Morphological changes

There are several different forms of morphological change that cannot be understood without the notion 'existing complex word'. These include such phenomena as paradigmatic levelling, metanalysis, hypercharacterisation, reanalysis and affix-clustering. However, it is not necessarily true that the existence of complex words implies that they should occur in the lexicon of the competence theory. Unlike the arguments prosed in section 2.2 and 2.3, which proved that certain properties of complex words play a role in grammatical rules, the phenomena presented below do not provide compelling arguments for approach B, but they do make it plausible.

A well-known example of paradigmatic levelling is the change of Latin *honos* 'honour' nom. sg. to *honor*, on the basis of such forms as the genitive *honoris* and the accusative *honorem* (Kiparsky 1972/1982b:99). With respect to this example, Kiparsky points out that the derived adjective *honestus* 'honest' keeps the *-s* of the base word. In other words, the derived word *honestus* becomes autonomous as soon as it has been formed, and is not derived anew every time from *honor*; it follows then that paradigmatic levelling does not affect this word.

We find a similar situation in Dutch where, for instance, the form *verkoren* 'chosen', in the paradigm of *verkiezen* 'choose', has been levelled to *verkozen* 'chosen', but the *-r* remains in the form *uitverkoren* 'elected', a transposition of a past participle to an adjective.

An example of metanalysis is the development of the suffix *-ling* in Dutch (Koefoed 1978:45) and in German (Plank 1980:74). As a result of boundary shift in words like *edel+ing* 'nobleman' and *Karol+ing* 'Carolingian' there has developed a suffix *-ling* which occurs for instance in *naarling* 'an odious fellow' and *stommeling* 'a dunce'[4].

Hypercharacterisation involves adding an affix to a word which already has an affix with the same function, as in Dutch *Dominic+an+er* 'Dominican', *August+ijn+er* 'Augustinian' and *Francisc+an+er* 'Franciscan' (van Marle 1978:149) and in German *Prinzessin* 'princess', *Baronessin* 'baroness' and *Friseusin* 'hairdresser' (Plank 1980:77).

Dutch examples of reanalysis are found in van Marle (1978:152). An example from French is the suffix *-age*, which was initially attached to such nouns as *aunage* (from *aune* 'ell'). As soon as it existed, *aunage* could be reinterpreted as a derivation from the verb *auner* 'measure by the ell'. According to this kind of reinterpretation, *-age* became a verbal suffix in modern French (Fleischman 1977:97). This phenomenon is reflected in Dutch in the coexist-

[4] Metanalysis also rarely occurs in syntactic configurations, as in English *a napron* > *an apron*. This kind of metanalysis, no doubt, must have been influenced by the fact that *a* and *napron* constituted one phonological word.

ence of denominal and deverbal words in *-age*, like *takelage* 'rigging' by the side of *stoppage* 'invisible mending'.

Affix clustering, whereby two affixes come to function as a unit, also presupposes the existence of complex words on the basis of which the language-user may regard the occurrence of two such elements in one word as a unit. Some examples from Dutch, in this case discontinuous affix clusters, are:

(2)

ge + t/d	gelaarsd 'booted', geboord 'drilled', gebeft 'collared'
be + t/d	behaard 'hairy', besnaard 'stringed'
be + ing	beharing 'hair', 'hair-covering'
ver + iseer	veralgemeniseer 'generalise'
de + iseer	destaliniseer 'destalinise'
on + elijk	onvermijdelijk 'unavoidable'

In cases like *veralgemeniseer* 'generalise', *destaliniseer* 'destalinise' and *onvermijdelijk* 'unavoidable', it is conceivable to propose a possible word as a link in the derivation. However, *gelaarsd* 'booted' cannot very well be regarded as derived from the verb *laars* 'boot' or *beharing* 'hair' as derived from the verb *behaar* 'provide with hair'. Most likely these words have been derived directly from *laars* 'boot' or *haar* 'hair', which implies the assumption of affix clusters[5].

2.6. Paradigmatic word formation

The fact that the notion 'existing complex word' is not a superfluous one also emerges from the paradigmatic dimension of word formation, for which Kaldeway and Koefoed (1979), Van Marle and Koefoed (1980) and Sassen (1980) ask renewed attention. Words, once created, come to be placed in a framework of paradigmatic relations to other words, relations which do not necessarily reflect the derivational history of those words, and may consequently cause the development of secondary types of word formation. The following examples serve to illustrate this point.

[5] A special point is the question whether the various forms of an inflexional paradigm should also be registered in the lexicon. According to Aronoff's criterion this only applies to the (usually sporadic) irregular inflexional forms. Halle (1973:7-9) on the other hand, advocates the incorporation of complete inflexional paradigms in the lexicon. One of his arguments for this view is the phenomenon of paradigmatic levelling or paradigmatic pressure and for this reason he feels that paradigms should somewhere be incorporated into the grammar. "If paradigms can influence the evolution of language, then there is every reason to expect that paradigms must appear as entities in their own rights somewhere in the grammar".

Paradigmatic levelling, however, can also be explained by the hypothesis that the language-acquiring child infers the underlying form of the stem (e.g. *honor* instead of *honos*) from the evidence of the heard forms *honoris* and *honorem*, without there being question of a complete paradigm of all forms in the lexicon (cf. Kiparsky 1978/1982b:230).

(3) i schip 'ship' ⟶ : schipbreuk 'shipwreck'
: schipbreukeling 'shipwrecked person'
vakantie 'holiday' : vakantiebreukeling 'holiday-wrecked person' (M. Toonder *Hm.* p. 157; Dutch comic)

ii [arbeid]$_V$ 'work'
arbeider 'worker' : arbeidster 'female worker'
bestuurder 'administrator': bestuurdster 'female governor' (Uitkijkpost Heiloo 31.3.82; Dutch local daily)
aktievoerder 'campaigner': aktievoerdster 'female campaigner' (Hervormd Nederland 18.4.81; Dutch weekly)

iii sympathie 'sympathy' : sympathisant 'sympathiser'
antipathie 'antipathy' : antipathisant 'antipathist' (J. Blokker, De Volkskrant, 30.10.77; Dutch daily)

iv [bevolk]$_V$ 'populate'
bevolking 'population' : bevolkers 'populators'
universiteitsbevolking 'university population' : universiteitsbevolkers 'university populators' (Forum der Letteren 20 (1979) p. 93; Dutch academic periodical)

In all these examples new words are formed by the substitution of a morpheme. The point here is that the paradigmatic relations which form the basis of these substitutions can only be applied to existing linguistic signs. It is true that we cannot decide on the basis of these phenomena whether the 'existence' of these signs is part of competence, but such phenomena do get a natural interpretation in approach B, as in the case of morphological changes.

2.7. Conclusions

In my opinion, the phenomena discussed so far give ample support to approach B, which implies that complex words, or at least those complex words with minimally one idiosyncratic property, are entered into the lexicon. Arguments in favour of this view have been presented in sections 2.2 – 2.4, whereas those phenomena observed in sections 2.5 and 2.6 make this conception of the lexicon even more plausible.

3. Lexical Phonology an the nature of the lexicon

In Siegel (1974/1978) we find the following hypothesis with regard to the organisation of the morphological component of English:

(4) Simplex words and roots
↓
Class I affixation ('+ – affixation')
↓
Cyclic stress rules
↓
Class II affixation ('# – affixation')
↓
Word level stress rules
↓
Well formed words

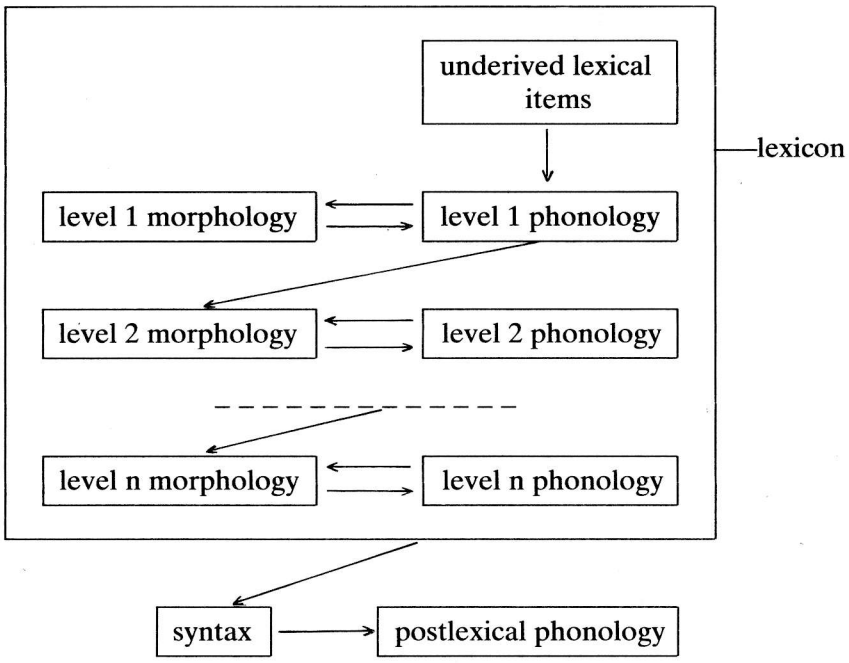
Class I affixes can shift the stress pattern of the base word, such as *-ee* in *emplóy – employée* or *-al* in *párent – paréntal*. They can be affixed both to words and to roots. Class II affixes, such as *-ness, -less* and *-er* are stress neutral i.e.: they do not shift the stress of the base word. They are attached only to words[6]. The stress-neutral character of these affixes is guaranteed by both the ordering of this type of affixation after cyclic stress rules and the presence of the word-internal boundary symbol #, which blocks the application of cyclic stress rules by convention, because the # is not mentioned in the structural description of these rules. Finally, this model also predicts, according to Siegel, that class II affixes are always peripheral with respect to class I affixes. Consequently, the rule ordering also expresses restrictions on affix combinations.

Hypotheses of this kind, relating to the morphology of English, are found in Allen (1978), Strauss (1979c), Kiparsky (1982a,c) and Mohanan (1982). In the last two publications, however, this theory has acquired a more general form, being meant as a general hypothesis concerning the interaction of phonology and morphology in the morphological component of natural languages.

This theory, which is known as the theory of LEXICAL PHONOLOGY, comprises, in essence, two sub-hypotheses:
(i) Phonological rules (not only stress rules, as in Siegel's model) can already be applied in the morphological component, immediately after the operation of a morphological rule;

[6] However, as word formation rules are optional, the ordering hypothesis does not guarantee at all that class II affixes cannot have roots as input. Moreover, both Aronoff (1976:32) and Strauss (1979c:398) give counter-examples to this claim, e.g. *butch#er, drear#y* and *happ#y*. Another problem is that the ordering hypothesis is not qualified to account for restrictions on affix combinations *within*, for example, class I affixes, as van Marle (1979:123) notes.

(ii) the morphological rules can be divided into *n* levels; a morphological rule of level *i* can no longer be operative as soon as a morphological rule of level *i + 1* has applied. Phonological rules operating within the lexicon, are active at one or more levels which probably have to be contiguous (Mohanan 1982, Kiparsky 1982c:132). Thus in Kiparsky's theory, the morphological component is generally structured as follows:



The outputs of each level are well-formed words.

One great advantage of the first hypothesis is that the cyclicity of phonological rules is no longer an independent principle, applicable to a subcategory of the phonological rules, but is a result of the organisation of the morphological component. In addition, this theory predicts correctly that some phonological rules should operate before morphological ones. As far as Dutch is concerned, I have defended this hypothesis in Booij (1981b); I will not discuss it any further in this article[7].

The second sub-hypothesis comprises two aspects. First, in a 'level-ordered morphology', the field of application of phonological rules can be specified without using a distinction between several types of boundary symbol (such as +,# and ##). For example, in Kiparsky's theory the main stress rule in English operates on level 1, which makes it impossible for this

[7] See also Harris (1982) for an interesting elaboration of this hypothesis for Spanish.

rule to affect complex words formed on level 2 (words with "#" – affixes and compounds), guaranteeing that suffixes such as *-less* and *-ness* will be stress-neutral. Secondly, this level ordering also predicts the order of affixes in a multiply complex word.

3.1. Strict cyclicity

Mascaró introduces a principle of STRICT CYCLICITY, which states that cyclic phonological rules can operate only in derived environments, i.e. environments created by the previous application of a phonological or morphological rule. The condition reads as follows (Kiparsky 1982c:154):[8]

(5) *Strict Cycle Condition*
a. Cyclic rules apply only to derived representations.
b. Def.: A representation ϕ is *derived* with respect to rule R in cycle j iff ϕ meets the structural analysis of R by virtue of a combination of morphemes introduced in cycle j or the application of a phonological rule in cycle j.

The Trisyllabic Shortening Rule (TSR) will serve to demonstrate the effect of this condition. This rule affects, among others, the words in the right hand column of (6i). Kiparsky (1982c:147) states the rules as in (6ii):

(6i)

sāne	sănity
ōmen	ŏminous
līne	lĭnear
nātion	nătional

(6ii) $V \rightarrow [-\text{long}] / - C_0V_iC_oV_j$ where V_i is not metrically strong.

The condition on V_i entails that V_i may not be stressed, so that the rule does not affect e.g. *idólatry*, where the first vowel remains long. Condition (5) correctly prevents TSR from affecting simplex words such as *ivory*, *nightingale* and *Oedipus*, which do satisfy the structural description of (6ii), but still get no short vowel in the first syllable. For example, *ivory* does meet the structural conditions of (6ii), but not because of the application of a morphological or phonological rule.

Kiparsky does not want to consider the Strict Cycle Condition as an independent principle of grammar, but prefers to derive it from another condition, the ELSEWHERE CONDITION, which states that if two rules can be applied to a certain form, and produce different results, only the more specific rule is applied:

[8] This condition is related to that stated in Kiparsky (1973) "Obligatory neutralization rules apply only in derived environments", but it is more restricted, because it only holds for cyclic rules.

(7) *Elsewhere Condition* (Kiparsky 1982c: 136-37)

Rules A, B in the same component apply disjunctively to a form ϕ if and only if

(i) The structural description of A (the special rule) properly includes the structural description of B (the general rule),

(ii) The result of applying A to ϕ is distinct from the result of applying B to ϕ. In that case A is applied first, and if it takes effect, then B is not applied.

The desired blocking of the Trisyllabic Shortening Rule (TSR) with respect to the simplex words is now achieved by (i) the Elsewhere Condition, and (ii) the assumption that every lexical entry is an identity rule, the structural description of which is identical with the structural change. Therefore, in the case of *ivory* two rules compete with each other:

(8) i i v o r y → i v o r y

ii v $c_o v_i c_o v_j$ → v $c_o v_i c_o v_j$
[-long]

The Elsewhere Condition applies here, because the structural desccription of (8i) is more specific, and consequently includes that of (8ii). Moreover, the outputs are distinct i.e. contradictory, because the output of (8i) includes a long vowel, whereas (8ii) has a short one.

An additional advantage of Kiparsky's reinterpretation of the Strict Cycle Condition is that cyclic rules are now allowed to operate on simplex words if they *add* information as, for example, the English Main Stress Rule. The Elsewhere Condition does not block the application of this rule to simplex words, because the output of this rule is not distinct from (contradictory to) the stress*less* output of the lexical identity rule.

Kiparsky argues that the Elsewhere Condition correctly fails to block the application of TSR to complex words, because complex words do not occur in the lexicon, and consequently do not form a lexical identity rule. It seems now that approach A from section 2, the view that complex words do not occur in the lexicon, forms the basis of Kiparsky's theory of rule application. However, this is not the case. No problem arise concerning approach B, provided we assume that the effect of lexical phonological rules is coded in the lexical representation of complex words. The lexical representation of *sanity* is then /sɛnity/, with a short vowel in the first syllable. Here, the Elsewhere Condition does not block the application of TSR, because the output is not contradictory to that of the lexical identity rule: in both cases the vowel of the first syllable is short. In this case TSR is allowed to operate vacuously without having a wrong effect on the output.

If the lexical representations are as concrete as is suggested here, the representations of the exceptional behaviour of complex words such as *obesity*, which, in spite of TSR, have a long vowel in the second syllable, can also be quite simple, viz. with a long vowel in the second syllable. Then the Elsewhere Condition blocks, as desired, the application of TSR and the use of a negative rule feature has become superfluous[9].

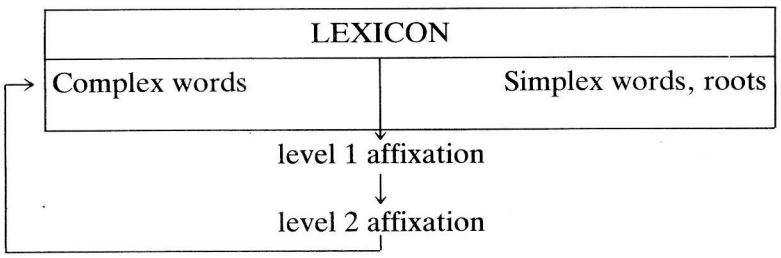
It can be concluded that approach A does not need to be a cornerstone of the theory of rule application defended by Kiparsky, and that approach B, in that respect, provides an even more attractive account of exceptions.

3.2. Extrinsic ordering of word-formation rules?

As we have seen above, the level-ordering of morphological and phonological rules has two functions: to delimit the domain of phonological rules, and to account for the restrictions on affix combinations.

As far as the latter function is concerned, ordering is useful only when the lexicon does not have a list of complex words *that can also serve as input for word formation*, for this would make ordering as a mechanism, designed to account for the restrictions on affix combinations, senseless, as is shown by the following diagram of a morphological component with two levels of affixation:

(9)



As word formation rules are optional, this model permits a word of the type $[[x]\ Aff_2]$ to be made first (Aff_2 = affix of level 2), and then to serve as input to level 1 affixation. In spite of level-ordering, this procedure allows words of the type $[[[x]\ Aff_2]Aff_1]$ to be derived, with an affix of level 1 being peripheral to an affix of level 2.

Naturally this problem arises only if we accept both that competence contains a list of complex words (approach B), and that it serves as input to word formation. Halle (1973), for instance, makes only the first assumption, allow-

[9] Here the interpretation of the sentence "...if it takes effect..." in the Elsewhere Condition is not clear to me. It cannot mean that A must produce a difference between input and output, for lexical identity rules do not, but still Kiparsky ascribes the A function to them: they must block TSR, among other things.

ing word formation rules to operate succesively in his model, without interference of the 'dictionary'. However, he does observe (like e.g. Jackendoff 1975:652) that idiosyncratic properties of complex words return systematically in words formed on the basis of those complex words. To give a simple example: the '(apple) core' interpretation is found not only in *klokhuis*, but also in the diminutive formed from it: *klokhuisje*. Accordingly, Halle concludes that the 'dictionary' should serve as a *global condition* on word formation. In this respect, he notes that "...[t]his fact would require that word formation rules be formal devices of considerable power." (p.13). This is no doubt a great disadvantage, particularly since there is a simple alternative: the assumption that word formation rules apply to existing complex words (see also Booij 1977:20).

Aronoff (1976) and, following his example, Selkirk (1980:597), are representatives of the view that word formation rules affect existing words (simplex as well as complex):

(10) All regular word-formation processes are word-based. A new word is formed by applying a regular rule to a single already existing word. (Aronoff 1976: 21).[10]

This implies that Aronoff assumes the loop of model (9). Consequently, he rejects the extrinsic ordering of word formation rules as means to express restrictions on affix combinations. "...ordering of WFR's is impossible within the general framework of this monograph." (p.61). The same point is made again on p. 84 of his book when he argues that formations such as

(11) analyz#abil+ity
standard#ize+ation
govern#ment+al

in which a +-affix is peripheral with respect to a #-affix, do not constitute any problem whatsoever for his morphological theory, for in the first application of the word formation cycle e.g. *#able* can be attached and in the next one *+ity*[11].

[10] Aronoff does not give an exact definition of the notion 'existing word'. It cannot be equated with 'word in the lexicon', for only complex words with at least one idiosyncratic property are entered, whereas also entirely regular complex words can be input to word formation. If, on the other hand, we do interpret 'existing word' as 'word in the lexicon', hypothesis (3) should be restated as follows "...a new word is formed by applying a regular rule to a single already existing or *possible* word".

[11] Aronoff notes (p.84-85) that problemes do arise with respect to stress rules. For example, the stress in *analyz#abil+ity* cannot shift to the right in the last cycle, on account of the blocking effect of the # of *-able*. This demonstrates that the *SPE*-theory of boundary symbols as instrument for the proper application of stress rules is inadequate without the ordering hypothesis.

Other well-known counter-examples to the hypothesis that stress-neutral affixes are attached after stress shifting ones, are words such as *un#grammatical+ity* derived from *ungrammatical* and *extra#metrical+ity* derived from *extrametrical*. In the theory of level ordered morphology such formation can only be accounted for in *ad hoc* ways. For instance, with respect to *governmental* and *developmental*, Mohanan (1982:50) assumes, without any further motivation, that in these words *-ment* is a level 1 suffix. Concerning *ungrammaticality*, Kiparsky (1982a) assumes that, though in his theory words normally lose their internal structure at the end of each level, (the ERASURE CONVENTION)[12] some words, such as *ungrammaticality*, are an exception to his Erasure Convention, allowing the prefix *un* to be inserted on level 1 in the still visible part [*grammatical*] of [[*grammatical*] *ity*]. Apart from the fact that Kiparsky is forced, then, to provide complex words with exception features, i.e. with respect to the Erasure Convention and thus to list them, the assumption that word formation rules can insert a prefix within the internal structure of a word, is very dubious indeed.

As a result, we are urged to conclude that extrinsic ordering of word formation rules is not the right mechanism to account for the restrictions on affix combinations. Which approach should be taken instead, can be illustrated by the following Dutch examples.

This problem does not occur when the boundary symbols are abolished. Aronoff does not follow this approach, though he does seem to realise the redundancy in assuming both boundary symbols and ordering when he describes the role of boundaries as follows (p.81): "Boundaries encode the place in the phonological derivation of the base of a WFR at which the operation of the WFR is performed".

[12] Mohanan (1982:8) and, following his example, Kiparsky (1982a) propose a Bracketing Erasure Convention, which deletes the internal brackets of a complex word at the end of each level. This prevents a phonological rule of level n, which mentions brackets in its context, from operating as yet on (part of) a word which has been formed on an earlier level. Thus, this convention also guarantees that level ordering functions as a means for the specification of the domain of phonological rules.

In addition, this convention entails that morphological rules operating on a later level, cannot use information with respect to the morphological structure of their inputs, which has been generated on an earlier level. For instance, if level ordering was to be assumed for Dutch, stress-carrying suffixes such as *-aal* and *-ieus* would belong to level 1, and stress-neutral ones, such as *-te* to level 2. However, one property of the suffix *-te* is that it can be attached only to simplex words (see Booij 1977:129). Yet, the Erasure Convention would predict that *muisstilte* 'absolute silence' and *messcherpte* 'utmost sharpness' (from the compounds *muis-stil* 'as quiet as a mouse' and *mes-scherp* 'as sharp as knife') are indeed not well-formed, but on the other hand, *mod-ieus-te* 'fashionableness' and *grammatik-aal-te* 'grammaticalness' would be well-formed, which is a wrong prediction. If there are constraints on word-formation of the type 'operates only on simplex words', of which *-te* is an example, we must conclude that the combination of level ordering and the Erasure Convention is empirically wrong. In German, a similar constraint holds for the suffix *-ling* (Plank 1980:136).

In Dutch the principle applies that non-native suffixes such as *-aal* and *-iteit*, may only be attached when they are adjacent to another non-native morpheme (lexical or bound) (see Booij (1977:131-139)):

(12)

(i)	grammatika	grammatikaal	(ii)	buik	*buikaal
	'grammar'	'grammatical'		'belly'	
	banaal	banaliteit		groen	*groeniteit
	'banal'	'banality'		'green'	

This principle also predicts that in complex words with more than one suffix the native suffixes, such as *-heid* and *-ig* are peripheral to non-native suffixes. The class of non-native suffixes almost coincides with the class of accent-carrying suffixes, therefore the order accent-carrying suffix before accent-neutral suffix is predicted by an independently motivated principle. The level ordering hypothesis (level 1: stress-carrying suffixes, level 2: stress-neutral suffixes) has become superfluous now.[13] That the principle introduced here is superior to the level ordering hypothesis, also appears from the behaviour of the only three Dutch suffixes *-es, -ij* and *-in* which are accent-carrying and yet native, as appears from such formations as *voogdés* 'guardian (female)', *voogdíj* 'guardianship' and *heldín* 'heroin'. They can be attached to accent-neutral suffixes. Consider:

(13) dans-er-és, 'danceuse', toven-aar-és 'sorceress'
maat-schapp-íj 'society', stom-er-íj 'dry-cleaner's'
bakk-er-ín 'baker's wife', cisterciëns-er-ín 'Cistercian (female)'

Moreover, some restrictions on affix combinations such as the ones illustrated above, are strong tendencies rather than absolute principles which makes it difficult to account for them in terms of rule ordering (see for exceptions e.g. Booij (1977:136)). Restrictions on affix combinations such as these, seem also relevant for English. A formation such as *ungrammaticality* does not constitute a problem, because the [+NATIVE] prefix *un-* is not adjacent to the [−NATIVE] suffix *-ity*[14]. *Governmental* and *developmental*, however, remain exceptions (assuming that *-ment* is [+NATIVE] and *-al* [−NATIVE]). Needless to say that the principle discussed here no doubt accounts only for a

[13] In order to avoid needless complication of the argumentation, I will disregard here the category of stress-shifting, but not stress-carrying suffixes.

[14] If we consider suffixes as the head of complex words (see Hoekstra, van der Hulst and Moortgat (1981), we can also restate the condition in such a way that the suffix which is to be added must be [-NATIVE] if the head is [-NATIVE]. Thus *ungrammaticality* is no problem, because the head of the base *ungrammatical* is *al*.

limited number of restrictions on affix-combinations in Dutch and other conditions also play a role.

The remaining question is, to what extent level ordering in the morphological component is needed as an instrument for the delimitation of the domain of lexical-phonological rules. A restrictive, and therefore, attractive hypothesis, is that word formation rules are not ordered. This implies that the delimitation of the domain of phonological rules should be effected in another way. It is certainly possible to develop such an alternative (see e.g. Selkirk (1984), Booij (1985)), but this would exceed the scope of this article.

3.3. Conclusions

The theory of Lexical Phonology, as stated in Kiparsky (1982a), does not hang on the claim that only simplex words and roots are listed in the lexicon, the Elsewhere Condition can also predict strict cyclicity in approach B. It even becomes easier to account for exceptions to the rules.

However, the sub-theory or 'level-ordered morphology' is open to strong doubt. Approach B entails that extrinsic ordering of word formation rules cannot express restrictions on affix-combinations. We have noticed that other approaches to account for such restrictions are quite feasible and, as far as Dutch is concerned, empirically more adequate. The hypothesis that word formation rules are not ordered still needs further analysis with respect to its phonological consequences.

4. Word-based morphology?

Within the framework of the theory of Lexical Phonology, objections have also been raised against Aronoff's hypothesis of word-based morphology, cited above[15].

When Aronoff argues that words are derived from words, he does not mean words in their concrete shape, but *stems* (Aronoff (1978a)). In English and in Dutch words and stems have similar forms, but, for example, in German they do not. The word *findbar*, for instance, in German is derived from the stem *find-* which can occur only in combination with an inflexional suffix. Yet we call a derivation such as *findbar* 'word-based'.

Aronoff's hypothesis implies that a word such as *nominee* is not derived from the root **nomin*, as Siegel (1974/1978), Allen (1978) and Kiparsky (1982a) assume, but from the stem *nominate*, by adding the suffix *-ee* first and

[15] However, the hypothesis of the 'word-based' morphology should not be interpreted as a universal claim. Possibly, there are languages in which roots play an essential role in morphology. The point here is whether in languages such as English and Dutch only words can function as input to word formation or that roots can be similarly employed.

then deleting the suffix *-ate* by means of a 'truncation rule'. Aronoff's most important argument for his theory is that the relation between *nominate* and *nominee* is the same as that between, for instance, *employ* and *employee*; the meaning of the noun in *-ee* is in both cases a compositional function of the meaning of the verb. Moreover, by deleting the suffix *-ate* by a separate 'truncation rule', the word-formation rule itself can be stated as simple as possible.

In Dutch we find a comparable situation. Consider:

(14)	i	algebra 'algebra'	algebra*isch* 'algebra*ic*'
	ii	democrat*ie* 'democrac*y*'	democrat*isch* 'democrat*ic*'
(15)	i	stabiel 'stable'	stabil*iseer* 'stabil*ise*'
	ii	democrat*isch* 'democrat*ic*'	democrat*iseer* 'democrat*ise*'
(16)		steriliseer 'steril*ise*'	sterilis*atie* 'sterilis*ation*'
(17)		consumpt*ie* 'consumpt*ion*'	consumpt*ief* 'consumpt*ive*'

The examples (14ii), (15ii), (16) and (17) show that the words in the right hand column do not have a suffix more than the corresponding words in the left hand column, whereas semantically spoken the words on the right have been derived from the words on the left.

There are three possible ways of relating such words as *democratie* 'democracy' and *democratisch* 'democratic' to one another:

(i) by deriving both words from the root **democrat*

(ii) by adding the suffix *-isch* to *democratie* 'democracy', followed by truncation of *-ie*, or, a variant, substitution of *-ie* by *-isch*;

(iii) by assuming a meaning postulate which relates words of the form $[x + ie]_N$ and words of the form $[x + isch]_A$ to one another (cf. van der Hulst and Moortgat 1980:22-23).

The meaning postulate method implies that we assume a rule such as (18):

(18) $[x + i]_N \leftrightarrow [x + is]_A$ 'relating to N'

Rule (18) is a redundancy rule which relates two words A and B to one another, the meaning of B being a compositional function of the meaning of A, whereas the form of B is not a compositional function of A. The problem is that this type of description makes sense only for non-productive relations. As soon as rule (18) is permitted to operate creatively, it has in fact become an affix substituting word-formation rule, which does not distinguish itself

from the second option mentioned above. The derivation of words in *-isch* from words in *-ie* is no doubt productive, just as that of words in *-ief* from words in *-ie* and that of words in *-atie* from words in *-eer*[16]. In addition we must also specify which of the two words is the base for this type of word formation, because conversely we may not derive, for instance, **panie* 'panic' from *panisch* 'panicky'. In other words, the double arrow in (18) should be replaced by an arrow pointing to the right. Thus, essentially, we are dealing with a choice between (i) and (ii).

The first alternative has the advantage that operations like substitution or truncation are rendered superfluous. A great disadvantage is perhaps that in Dutch roots as such have no meaning, whereas we still must be able to express that the meaning of *democratisch* 'democratic' is a compositional function of the meaning of *democratie* 'democracy'. This problem can be solved by interpreting the root **democrat* as being an allomorph of *democratie*, both allomorphs being part of the lexical entry in question (see Lieber (1981, 1982)). Naturally, it should be stipulated in the word formation rule concerned, that the suffix *-isch* takes the root allomorph as input, at least when it is present in the lexical entry (cf. *algebraïsch* 'algebraic', where *-isch* takes a word as its basis).

Kiparsky derives an empirical argument for the root-solution from the theoretical framework of Lexical Phonology, elaborated above. He notes that if a word of the from [x + B] is derived from a word with the form [x + A], given the theory of Lexical Phonology, one might expect cases in which the phonological effect of affix A is still present in a word which is formed by replacing A by B. As such cases are not known to Kiparsky, he believes that the truncation/substitution approach makes empirically wrong predictions.

However, in Dutch we do have an unambiguous example of the phonological effect of a suffix in words in which that suffix is no longer present in the concrete form. We are concerned here with words in *-ster* with preceding [d] such as:

(19) toehoordster 'listener (female)', woordvoerdster 'spokeswoman', aktievoerdster 'campaigner (female)', aanvoerdster 'leader (female)', bestuurdster 'administrator (female)'

[16] Kooij (1979) also points out this problem when he discusses the possibility to represent the systematic relations within the non-native lexicon in terms of redundancy rules.

Herewith, we also reject Van Zonneveld's (1981) claim that the distinction between the rules of the native and the non-native lexicon can be accounted for in terms of an opposition between word-formation rules and redundancy rules. Moreover, Van Zonneveld incorrectly assigns word-formation based on non-native words (such as *stabiel – stabiliseer*) to the static redundancy rules of the lexicon, although this type of word formation is very productive.

The [d] is found here owing to a phonological rule which inserts this segment between a stem-final [r] and the suffix *-er* (in this case we are in fact dealing with homophonic suffixes with several different meanings, like the notion 'comparative' in *raarder* 'stranger', and 'inhabitant' in *Bijlmermeerder* 'person living in a certain part of Amsterdam' and 'agent' in *bestuurder* 'administrator'). The rule reads as follows:

(20) $\phi \longrightarrow d / V\ r \text{ —— } ər$

The presence of [d] in the words listed under (19) confirms that underlying *-er* has been present in these words in *-ster*[17].

Although the words cited in (19) clearly illustrate Kiparsky's argumentation, it should be noted that theoretically it is possible to interpret them as not being counter-examples to Kiparsky's claim, because the type of word formation illustrated here has a secondary character and is paradigmatic in nature. In fact, it is a type of word formation analogous to word pairs such as *arbeider – arbeidster* 'worker (male/female)', in which case *-ster* may be interpreted as substitute of *-er* instead of being added directly to the verbal stem *arbeid* 'work'. On this basis it is possible, if desired, to keep this type of word formation outside the empirical scope of morphological theory, as is done, for very good reasons, for formations such as *flotel* 'hotel on a ship, also providing transportation for cars' from *fleet* and *hotel, botel* 'hotel on a moored ship' (from *boat* and *hotel*)[18], or in the formations *kaasburger* 'cheeseburger' and *gehaktburger* 'mincemeat burger', formed analogously to *hamburger*.

Again, we run up against the problem of the delimitation of the domains of competence and performance in morphological theory, a delimitation which is not given *a priori*. Consequently, it is not possible to evaluate Kiparsky's argument definitively, without a further elaboration of morphological theory on this point.

Besides, it should be clear that not only phonological arguments can influence the choice between words or roots as bases for word-formation rules. The substitution/truncation-solution permits, in principle, the suffix, which is

[17] See for similar data Van Santen and De Vries (1981:118). A second example of a still existing phonological effect of a suffix which is no longer present, is possibly found in words such as *ambassadrice* and *enquetrice*, derived from *ambassadeur* and *enqueteur* respectively, where the schwa of the base words *ambassade* and *enquete* has already disappeared due to the phonological rule of pre-vocalic schwa deletion. This applies only if it is presupposed that the suffix *-rice* replaces the suffix *-eur*. According to the alternative interpretation which derives *-rice* by way of an allomorphy rule from *-eur+e* there is no question of suffix substitution, and consequently these words are not relevant to the problem under discussion here (see Schultink (1978)).

[18] Source: *De Nieuwe Taalgids* 63 (1970), 355, *Van Dale's Groot Woordenboek der Nederlandse Taal*, supplement 9th impression.

to be deleted, to influence the choice of the suffix, which is to be substituted or added, before the former disappears. This appears to be the case for Dutch concerning the choice between the suffixes *-isch* and *-ief*; nouns in stressed *-ie* get *-isch* and nouns in unstressed *-ie* get *-ief*. Compare:

(21)

i	democratíe 'democracy'	democratisch 'democratic'
	psychologíe 'psychology'	psychologisch 'psychological'
	allegoríe 'allegory'	allegorisch 'allegorical'
	hysteríe 'hysteria'	hysterisch 'hysterical'
	symmetríe 'symmetry'	symmetrisch 'symmetrical'
ii	agréssie 'aggression'	agressief 'aggressive'
	produktie 'production'	produktief 'productive'
	coördinátie 'coordination'	coördinatief 'coordinative'
	relátie 'relation'	relatief 'relative'
	explósie 'explosion'	explosief 'explosive'

Recent neologisms also show this regularity unambiguously:

(22)
i fobisch 'phobic' (<fobíe 'phobia', VARA TV 12.4.1982)
ii registratieve activiteiten 'registering activities (<registrátie registration', *Ad Valvas*, Dutch student paper 14.5.1982)
prestatief 'achieving' (‹prestátie 'achievement' *de Volkskrant* Dutch newspaper 19.12.1977)

This argument compels us to derive *democratisch* 'democratic' from the word *democratie* 'democracy'. However, again this is not a compelling argument in favour of substitution/truncation. The disappearance of [i] before the suffix *-isch* does not have to be interpreted *per se* as the disappearance of a morpheme. It can also be regarded as the effect of a phonological rule which deletes a stem final vowel before another vowel, analogous to *pianist* 'pianist' (<*piano* 'piano') and *cellist* 'cellist' (<*cello* 'cello').

One final related problem which should be discussed, is formed by the phonological alternations in the following word pairs:

(23)

democra[ts]+ie 'democracy'	democra[t]+isch 'democratic'
consump[s]+ie 'consumption'	consump[t]+ief 'consumptive'
publi[s]+eer 'publish'	publi[k]+atie 'publication'

The question is, which is the final sound in the lexical representation of the roots of these words. For example, should /ts/ or /t/ be chosen for the first word pair? The theory of Lexical Phonology in combination with the hypothesis that *democratisch* 'democratic' is derived from *democratie* 'democracy', makes the choice no longer an arbitrary one: /ts/ must be chosen, be-

cause otherwise the wrong phonetic form *[demokratsis] would be derived. If we were to assume underlying /demokrat+i/ the rule

(24) $t \longrightarrow ts \quad / \quad [+son] \text{ —— } i \begin{Bmatrix} [-segm] \\ [-cons] \end{Bmatrix}$

being necessary then, would be permitted to operate at once, even before affixation of *-isch*, resulting in [ts] before *-isch*. The Elsewhere Condition also requires [ts], because it would block the application of rule (24) in a lexical representation /demokrat+i/. Thus, instead of rule (24) Dutch requires a rule like (25):

(25) $ts \longrightarrow t / \text{ —— } \{\text{-isch,-eer,...}\}$

In the same vein, underlying /s/ should be chosen for *consumptie* 'consumption' and *publiceer* 'publish' as final segment for the root. This method has the apparent disadvantage of missing a generalisation: now we cannot predict which /s/ becomes a [t], and which a [k]. This disadvantage, however, is only apparent, because rules which conversely derive [s] from /k/ and /t/ are not transparent phonological rules either. Compare, for example, *publiceer* 'publish' with the verbs *trukeer* 'trick', *bruskeer* 'snub' and *rokeer* 'castle', where /k/ does not become an [s].

5. Conclusions

The theory of Lexical Phonology as stated by Kiparsky (1982a), comprises a number of hypotheses with respect to the organisation of the morphological component. This article has demonstrated that some of them are not tenable, particularly the idea that complex words do not belong to the lexicon and, in relation to this, that extrinsic ordering of the word-formation rules is not the right instrument to account for restrictions on affix combinations. Finally, some observations have been made on Kiparsky's hypothesis that Lexical Phonology entails the rejection of substitution or truncation rules. All this, however, leaves the essential idea of Lexical Phonology, the hypothesis that certain phonological rules already operate in the lexicon and can be applied earlier than morphological rules, absolutely undamaged.

A recurrent problem proved to be that of the delimitation of competence and performance in a theory on the word-creating ability of the language user. In some cases, the tenability of a morphological hypothesis appears to depend on the nature of this delimitation.

References

Alinei, M. 1980. "Lexical Grammar and Sentence Grammar. A Two-Cycle Model". *Quaderni di Semantica 1*. 33-95.

Allen, M. R. 1978. *Morphological Investigations*. Unpublished Ph. D. dissertation, Storrs: University of Connecticut.

Anderson, S. R. 1981. "Where's Morphology?". *Linguistic Inquiry 13*. 571-612.

Anshen, F. and M. Aronoff 1981. "Morphological Productivity and Phonological Transparency". *Canadian Journal of Linguistics 26*. 63-72.

Apresjan, J. 1974. *Leksičeskaja semantika. Sinonimičeskije sredstva jazyka*. Moskva: Izdatel'stvo Nauka.

Aronoff, M. 1976. *Word Formation in Generative Grammar*. Cambridge, Mass.: The MIT Press.

Aronoff, M. 1978a. "Lexical Representations". In *Papers from the Parasession on the Lexicon*, 12-25. Chicago: Chicago Linguistic Society.

Aronoff, M. 1978b. "A Reply to Moody". *Glossa 13*. 115-118.

Aronoff, M. 1980. "Contextuals". *Language 56*. 744-758.

Aronoff, M. 1983. "Actual Words, Potential Words, Frequency and Productivity". In *Proceedings of the, 13th International Congress of Linguists*, 163-171. Tokyo.

Aronoff, M. 1984 "Word Formation and Lexical Semantics". In M. Alinei (ed.) *Word Formation and Meaning*. Special roundtable issue of *Quaderni di Semantica. 5*. 45-49

Bartmiński, J. (ed.) 1981. *Pojęcie derywacji w lingwistyce*. Lublin: Uniwersytet M. Curie-Skłodowskiej.

Beard, R. 1976. "A Semantically Based Model of a Generative Lexical Word-Formation Rule for Russian Adjectives". *Language 52*, 108-120.

Beard, R. 1981. *The Indo-European Lexicon: A Full Synchronic Theory*. Amsterdam: North-Holland.

Beard, R. 1982. "The Plural as a Lexical Derivation". *Glossa 16*. 133-148.

Beard, R. 1984. "Prepositions and Case". *Zbornik za filologiju i lingvistiku 27-28*. 57-63.

Beard, R. 1986. *On the Separation of Derivation from Morphology: Toward a Lexeme/Morpheme Based Morphology*. Bloomington, Ind.: Indiana University Linguistics Club.

Beard, R. (forthcoming) "Neurological Evidence for Lexeme/Morpheme Based Morphology". *Theoretical Approaches to Word Formation*. Proceedings of the Veszprém Conference, May 1-4, 1986. F. Kiefer (ed.).

Bever, T., J. Katz and T. Langendoen (eds) 1976. *An Integrated Theory of Linguistic Ability*. New York: Crowell.

Biermann, A. 1980. "Nominalinkorporation". Arbeitspapiere, Institut für Sprachwissenschaft: Universität Köln.

Bierwisch, M. 1981. "Linguistics and Language Error". *Linguistics 19*. 581-626.
Bloomfield, L. 1933. *Language*. London: Allen & Unwin.
Boas, H. U. 1977. "Transpositional and Semantic Adjectives Revisited". In H.E. Brekle and D. Kastovsky (eds) *Perspektiven der Wortbildungsforschung*. Bonn: Bouvier Verlag H. Grundmann.
Bochner, H. (unpublished) "Exceptions to Palatalization in Polish". Cambridge, Mass.: Harvard University.
Bolinger, D. 1967. "Adjectives in English. Attribution and Predication". *Lingua 18*. 1-34.
Booij, G. E. 1977. *Dutch Morphology. A Study of Word Formation in Generative Grammar*. Dordrecht: Foris Publications.
Booij, G. E. 1981a. *Generatieve Fonologie van het Nederlands*. Utrecht: Het Spectrum.
Booij, G. E. 1981b. "Rule Ordering, Rule Application and the Organization of Grammars". In W. U. Dressler et al. (eds), 45-56.
Booij, G. E. 1985. "The Interaction of Phonology and Morphology in Prosodic Phonology". In E. Gussmann (ed.), 23-34.
Botha, R. P. 1968. *The Function of the Lexicon in Transformational-Generative Grammar*. The Hague: Mouton.
Botha, T. C. 1982. *Primary Compounds as Bases of Affixation Rules*. M.A. thesis, University of Stellenbosch.
Brame, M. K. 1977. "The Base Hypothesis and the Spelling Prohibition". *Linguistic Analysis 4*. 1-30.
Brettschneider, G. and C. Lehmann (eds) 1980. *Wege zur Universalienforschung. Festschrift H. Seiler*. Tübingen: Narr.
Bright, W. 1958. *An Outline of Colloquial Kannada*. Poona: Deccan College.
Bright, W. 1972. "The Enunciative Vowel". *International Journal of Dravidian Linguistics 1*. 26-55.
Broselow, E. 1982. "Subjacency in Salish Double Reduplication". *NELS XXI*.
Broselow, E. 1983. "Subjacency in Morphology: Salish Double Reduplication". *Natural Language and Linguistic Theory 1*. 317-346.
Carstairs, A. 1981. "Notes on Affixes, Clitics, and Paradigms". Bloomington, Ind.: Indiana University Linguistics Club.
Chomsky, N. 1970. "Remarks on Nominalizations". In R. Jacobs and P. Rosenbaum (eds) *Readings in English Transformational Grammar*, 184-221. Waltham, Mass.: Blaisdell.
Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht: Foris Publications.
Chomsky, N. and M. Halle 1968. *The Sound Pattern of English*. New York: Harper and Row.
Clark, H. and E. Clark 1979. "When Nouns Surface as Verbs". *Language 55*. 767--810.
Dell, F. and E. O. Selkirk 1978. "On a Morphologically Governed Vowel Alternation in French". In S. J. Keyser (ed.) *Recent Transformational Studies in European Languages*, 1-52. Cambridge, Mass.: The MIT Press.

Dixon, R. M. W. 1977. *A Grammar of Yidin*^{y}. Cambridge: Cambridge University Press.

Dokulil, M. 1962. *Tvoření slov v češtině, 1: Teorie odvozování slov*. Praha: Československá Akademie Věd.

Dowty, D. 1979. *Word Meaning and Montague Grammar*. Dordrecht: Reidel.

Dressler, W. U. 1977a. "Elements of a Polycentristic Theory of Word Formation". *Wiener Linguistische Gazette 15*. 13-32.

Dressler, W. U. 1977b. "Phono-Morphological Dissimilation". In W. U. Dressler and O. E. Pfeiffer (eds) *Phonologica 1976*, 41-48. Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft.

Dressler, W. U. 1977c. *Grundfragen der Morphonologie*. Wien: Österreichische Akademie der Wissenschaften.

Dressler, W. U. 1979. "On a Polycentristic Theory of Word Formation (with Special Emphasis on Aphasiological Evidence)". In Dressler and Meid (eds), 426-429.

Dressler, W. U. 1980a. "Naturalness as a Principle in Genetic and Typological Linguistics". *TCLC 20*. 75-91.

Dressler, W. U. 1980b. "Universalien von Agens-Wortbildung". In Brettschneider and Lehmann (1980), 110-114.

Dressler, W. U. (to appear) "On Word Formation in Natural Morphology". In *Proceedings of the 13th International Congress of Linguists*. Tokyo. (A shorter version appeared in *Wiener Linguistische Gazette 26*. 3-13 and in *Preprints*, 149-155).

Dressler, W. U. and M. Meid (eds) 1979. *Proceedings of the 12th International Congress of Linguists*. Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft.

Dressler, W. U., O. E. Pfeiffer and J. R. Rennison (eds) 1981. *Phonologica 1980*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Dressler, W. U., W. Mayerthaler, O. Panagl and W. U. Wurzel (in preparation) *Leitmotifs in Natural Morphology*. Amsterdam: Benjamins.

Fiengo, R. 1980. *Surface Structure: The Interface of Autonomous Components*. Cambridge, Mass.: Harvard University Press.

Fleischman, S. 1977. *Cultural and Linguistic Factors in Word Formation. An Integrated Approach to the Development of the Suffix -age*. Berkeley: University of California Press.

Francke, R. O. 1894. "Kürzungen der Komposita im Indischen". *WZKM 8*. 239--246.

Fraser, B. 1974. *The Verb-Particle Combination in English*. Tokyo: Taishukan Publishing Company.

Gaertner, H. 1933. *Gramatyka współczesnego języka polskiego*. Lwów/Warszawa: Książnica-Atlas.

Gawełko, M. 1976. *Sufiksy przymiotnikowe w języku polskim, niemieckim i francuskim. Studium z zakresu gramatyki porównawczej*. Wrocław: Ossolineum.

Givón, T. 1970. "Notes on the Semantic Structure of English Adjectives". *Language 46*. 816-837.

Grzegorczykowa, R. 1979. *Zarys słowotwórstwa polskiego*. Warszawa: Państwowe Wydawnictwo Naukowe.

Gussmann, E. 1978. *Contrastive Polish-English Consonantal Phonology*. Warszawa: Państwowe Wydawnictwo Naukowe.

Gussmann, E. 1980. *Studies in Abstract Phonology*. Cambridge, Mass.: The MIT Press.

Gussmann, E. (ed.) 1985. *Phono-Morphology. Studies in the Interaction of Phonology and Morphology*. Lublin: Katolicki Uniwersytet Lubelski.

Hagen, S. 1982. "A Root Morph Analysis in Russian Word Formation". *Folia Linguistica 16*. 163-179.

Hale, K. 1973. "Deep-Surface Canonical Disparities in Relation to Analysis and Change: An Australian Example". In T. A. Sebeok (ed.) *Current Trends in Linguistics 11*. 401-458. The Hague: Mouton.

Halle, M. 1973. "Prolegomena to a Theory of Word Formation". *Linguistic Inquiry 4*. 3-16.

Halle, M. and J.-R. Vergnaud 1980. "Three-Dimensional Phonology". *Journal of Linguistic Research 1*. 83-105.

Halle, M. and J.-R. Vergnaud (forthcoming) *Three-Dimensional Phonology*. Cambridge, Mass.: The MIT Press.

Harris, J. W. 1982. "Spanish Syllable Structure Assignment is Cyclic". In J. P. Lantolf and G. B. Stone (eds) *Current Research in Romance Languages*, 71--85. Indiana University Linguistics Club.

Heinz, A. 1956. "Uwagi nad funkcją znaczeniową przymiotnika odrzeczownikowego". *Język Polski 36*. 257-274.

Heinz, A. 1957. *Funkcja egzocentryczna rzeczownika*. Wrocław: Ossolineum.

Hetzron, R. 1971. "Internal Labialization on the *tt*-Group of Outer South Ethiopic". *Journal of the American Oriental Society 91*. 192-207.

Hetzron, R. 1977. *The Gunnan Languages*. Naples: Instituto Orientale di Napoli.

Hockett, C. F. "The Orgin of Speech". *Scientific American 203*. 89-96.

Hockett, C. F. and S. Altmann 1968. "A Note on Design Features". In T. A. Sebeok (ed.) *Animal Communication*. Bloomington: Indiana University Press.

Hoekstra, T. and H. van der Hulst (eds) 1979. *Morfologie in Nederland. GLOT*-special.

Hoekstra, T. H. van der Hulst and M. Moortgat (eds) 1981. *Introduction* in id. *Lexical Grammar*, 1-48. Dordrecht: Foris Publications.

Hudson, G. 1974. "The Representation of Non-Productive Alternations". In J. M. Jones and C. Jones (eds) *Historical Linguistics, II: Theory and Description of Phonology*, 203-229. Amsterdam: North-Holland.

Hulst, H. van der and M. Moortgat 1980. "Alex. Lexicale Analyse van een Taaldatabank". *INL Working Papers 2*.

Hulst, H. van der and N. Smith (eds) 1982. *The Structure of Phonological Representations I*. Dordrecht: Foris Publications.

Isačenko, A. V. 1972. "Rol' usečenija v russkom slovoobrazovanii". *International Journal of Slavic Linguistics and Poetics 16*. 95-125.

Jackendoff, R. S. 1975. "Morphological and Semantic Regularities in the Lexicon". *Language 51*. 639-671.

Jackendoff, R. S. 1977. *X̄ Syntax: A Study of Phrase Structure*. Cambridge, Mass.: The MIT Press.

Jespersen, O. 1939. "The History of a Suffix". *Acta Linguistica 1*. 48-56.

Jespersen, O. 1942/1961. *A Modern English Grammar on Historical Principles. Part VI: Morphology*. Copenhagen: E. Munksgaard.

Jespersen, O. 1949. "Efficiency in Linguistic Change". In *Selected Writings*, 381--466. Tokyo: Senjo.

Johnson, C. D. 1975. "Phonological Channels in Chaha". *Afroasiatic Linguistics 2*: 1-13 (25-37).

Kaldeway, J. and G. Koefoed 1979. "Strukturalisme en T.G.G. in het Licht van de Tegenstelling Paradigmatiek-Syntagmatiek". *Forum der Letteren 20*. 93-119.

Karaščuk, P. M. 1977. *Slovoobrazovanije anglijskogo jazyka*. Moskva: Višaja Škola.

Kastovsky, D. 1980. "Zero in Morphology: A Means of Making up for Phonological Losses?". In J. Fisiak (ed.) *Historical Morphology*, 213-230. The Hague: Mouton.

Katz. J. J. 1981. *Language and Other Abstract Objects*. Totowa, N. J.: Rowman and Littlefield.

Kaye, J. and Y.-Ch. Morin 1978. "Il n'y pas de règles de troncation, voyons". In W.U. Dressler and M. Meid (eds), 788-792.

Kiparsky, P. 1972. "Explanation in Phonology". In P. Kiparsky (1982b), 81-118.

Kiparsky, P. 1973. "Abstractness, Opacity and Global Rules". In O. Fujimura (ed.) *Three Dimensions of Linguistic Theory*, 57-86. Tokyo: TEC.

Kiparsky, P. 1974. "Remarks on Analogical Change". In P. Kiparsky (1982b), 199--215.

Kiparsky, P. 1978. "Analogical Change as a Problem for Linguistic Theory". In P. Kiparsky (1982b), 217-236.

Kiparsky, P. 1981. "Remarks on the Metrical Structure of the Syllable". In W. U. Dressler et al. (eds), 245-256.

Kiparsky, P. 1982a. "Lexical Phonology and Morphology". Lectures at the GLOW Phonology Workshop, Paris, March 1982 (partly published as Kiparsky (1982c)). In *Linguistics in the Morning Calm*. Selected papers from SICOL – 1981. Seoul: Hanshin Publishing Co., 3-92.

Kiparsky, P. 1982b. *Explanation in Phonology*. Dordrecht: Foris Publications.

Kiparsky, P. 1982c. "From Cyclic Phonology to Lexical Phonology". In H. van der Hulst and N. Smith (eds), 131-176.

Klavans, J. 1980. *Some Problems in the Theory of Clitics*. Unpublished Ph. D. dissertation, London: University of London.

Knobloch, J. 1973. "Reduplizierte Trikomposita". *Sprache der Gegenwart 23*. 135.

Koefoed, G. A. T. 1978. "Taalverandering in het Licht van Taalverwerving en Taalgebruik". In G. A. T. Koefoed and J. Van Marle (eds), 11-70. Groningen: Wolters-Noordhoff.

Koefoed, G. A. T. and J. van Marle (eds) 1978. *Aspecten van Taalverandering*. Groningen: Wolters-Noordhoff.

Kooij, J. G. 1979, "Morfologie en het Romaanse Vokabularium van het Nederlands". In T. Hoekstra and H. van der Hulst (eds), 23-40.

Kowalik, K. 1977. *Budowa morfologiczna przymiotników polskich*. Wrocław: Ossolineum.

Kurkowska, H. 1954. *Budowa słowotwórcza przymiotników polskich*. Wrocław: Ossolineum.

Lakoff, G. 1970. *Irregularity in Syntax*. New York: Holt, Rinehart and Winston.

Laskowski, R. 1974. "The *e~o, e~a* Alternation in Polish Verbal Morphology and the Slavic Secondary Imperfectives". *Makedonskij Jazyk 26*. 63-80.

Laskowski, R. 1975. *Studia nad morfonologią współczesnego języka polskiego*. Wrocław: Ossolineum.

Laskowski, R. 1981. "Derywacja słowotwórcza". In J. Bartmiński (ed.), 107-126.

Lees, R. B. 1960. *The Grammar of English Nominalizations*. Bloomington: Indiana University Press.

Lesau, W. 1950. *Ethiopic Documents: Gurage*. (Viking Fund Publications in Anthropology 14). New York: The Viking Fund.

Lesau, W. 1966. "The Impersonal in Chaha". In *To Honor Roman Jakobson*, 1150-1162. The Hague: Mouton.

Lesau, W. 1967/68. "The Pseudo-Gerundive in Chaha". *Rassegna di Studi Etiopici 23*. 27-42.

Lesau, W. 1979. *Etymological Dictionary of Gurage (Ethiopic)*. 3 vols. Wiesbaden: Otto Harrassowitz.

Levi, J. 1973. "Where Do All Those Adjectives Come from?". In *Papers from the 9th Regional Meeting*, 332-345. Chicago: Chicago Linguistic Society.

Levi, J. 1978. *The Syntax and Semantics of Complex Nominals*. New York: Academic Press.

Lieber, R. 1981. *On the Organization of the Lexicon*. Bloomington, Ind.: Indiana University Linguistics Club.

Lieber, R. 1982. "Allomorphy". *Linguistic Analysis 9*. 411-436.

Lieber, R. 1984. "Consonant Gradation in Fula: An Autosegmental Approach". In M. Aronoff and R. Oehrle. *Language, Sound, Structure*. Cambridge, Mass.: MJT Press. 329-345.

Lieber, R. (forthcoming) *Toward an Integrated Theory of Autosegmental Processes*. Cambridge, Mass.: The MIT Press.

Ljung, M. 1970. *English Denominal Adjectives. A Generative Study of the Semantics of a Group of High-Frequency Denominal Adjectives in English*. Lund: Studentlitteratur.

Maciusowicz, J. W. 1977. "Denominalne (orzecznikowe) przymiotniki relacyjno-jakościowe we współczesnym polskim języku literackim (i ich rosyjskie odpowiedniki)". *Prace Filologiczne 27*. 165-180.

Malicka-Kleparska, A. 1985a. *The Conditional Lexicon in Derivational Morphology. A Study of Double Motivation in Polish and English*. Lublin: Katolicki Uniwersytet Lubelski.

Malicka-Kleparska, A. 1985b. "Parallel Derivation and Lexicalist Morphology: The Case of Polish Diminutivization". In E. Gussmann (ed.), 95-112.
Malkiel, Y. 1970. *Patterns of Derivational Affixation in the Cabraniego Dialect of East-Central Asturian*. Berkeley: University of California.
Malkiel, Y. 1977. "Why AP-ISH but WORM-Y?". In P. J. Hopper (ed.) *Studies in Descriptive and Historical Linguistics*, 341-364. Amsterdam: Benjamins.
Marantz, A. 1982. "Re-reduplication". *Linguistic Inquiry 13*. 435-482.
Marchand, H. 1960/1969a. *The Categories and Types of Present-Day English Word-Formation*. München: C. H. Beck.
Marchand, H. 1969b. "Die Ableitung deadjektivischer Verben im Deutschen, Englischen und Französischen". *Indogermanische Forschungen 74*. 155-173.
Marle, J. van 1978. "Veranderingen in Woordstructuur". In G. Koefoed and J. van Marle (eds), 127-176.
Marle, J. van 1979. "Over Affixvolgorde: Enkele Observaties". In T. Hoekstra and H. van der Hulst (eds.), 119-129.
Marle, J. van and G. A. T. Koefoed 1980. "Over Humboldtiaanse Taalverandering, Morfologie en de Creativiteit van de Taal". *Spektator 10*. 11-47.
Mascaró, J. 1976. *Catalan Phonology and the Phonological Cycle*. Indiana University Linguistics Club.
Matthews, P. H. 1974. *Morphology: An Introduction to the Theory of Word Structure*. Cambridge: Cambridge University Press.
Mayerthaler, W. 1981. *Morphologische Natürlichkeit*. Wiesbaden: Athenaion.
McCarthy, J. 1979. *Formal Problems in Semitic Phonology*. Unpublished Ph.D. dissertation, Cambridge, Mass.: MIT.
McCarthy, J. 1981a. "The Varieties of Morphological Experience". Paper presented at Trilateral Conference on Nonlinear Phonology, University of Texas, Austin, April 1981.
McCarthy, J. 1981b. "A Prosodic Theory of Noncontatenative Morphology". *Linguistic Inquiry 12*. 373-418.
McCarthy, J. 1982. "Prosodic Templates, Morphemic Templates, and Morphemic Tiers". In H. van der Hulst and N. Smith (eds), 191-223.
McCarthy, J. 1983. "Phonological Features and Morphological Structure". In *Papers from the Parasession on the Phonology-Syntax Interface*. Chicago: Chicago Linguistic Society.
McCarthy, J. (forthcoming) *Formal Morphology*. Cambridge, Mass.: The MIT Press.
Mel'čuk, I. 1982. *Towards a Language of Linguistics*. München: Fink.
Mohanan, K. P. 1982. *Lexical Phonology*. Bloomington, Ind.: Indiana University Linguistics Club.
Nagórko, A. 1983. "O podstawach semantycznego podziału przymiotników". *Studia Semiotyczne 13*. 143-150.
Nicholson, G. A. 1916. *English Words with Native Roots and with Greek, Latin or Romance Suffixes*. Chicago: University of Chicago Press.
Nida, E. 1949. *Morphology. The Descriptive Analysis of Words*. Ann Arbor: University of Michigan.

Nida, E. 1975. *Exploring Semantic Structures*. München: Fink.
Panagl, O. 1977. "Aspekte der kindersprachlichen Wortbildung". *Salzburger Beiträge zur Linguistik 4*. 79-101.
Paulsson, O. 1974. *Aspects of Polish Verb Morphology and Phonology*. Göteborg: University of Göteborg.
Pennanen, E. 1980. "Observations on Word Formation and Syntax". Trier: Linguistic Agency, University of Trier.
Plank, F. 1981. *Morphologische (Ir-)Regularitäten*. Tübingen: Narr.
Polotsky, H. J. 1938. "Etudes de Grammaire Gourage". *Bulletin de la Societé de Linguistique de Paris 39*. 137-175 (reprinted in Polotsky (1971) 477-515).
Polotsky, H. J. 1951. "Notes on Gurage Grammar". *Notes and Studies Published by the Israel Oriental Society 2.* (reprinted in Polotsky (1971) 519-573).
Polotsky, H. J. 1971. *Collected Papers*. Jerusalem: The Magnes Press.
Post, M. 1983. "On the Semantic Indeterminacy of Denominal Adjectives". Paper presented at the 19th International Conference on Contrastive Linguistics, Błażejewko, Poland, December 1983.
Quirk, R., S. Greenbaum, G. Leech and J. Svartvik 1972. *A Grammar of Contemporary English*. London: Longman.
Ramanujan, A. K. 1963. *A Generative Grammar of Kannada*. Unpublished Ph. D. dissertation, Bloomington: Indiana University.
Rédei, K. 1982. "Die Herkunft des Imperativzeichens im Ungarischen". *Finnougrische Forschungen, 44*.1-10.
Reibel, D. 1963. *A Grammatical Index to the Compound Nouns of Old English Verse*. Unpublished Ph. D. dissertation, Bloomington: Indiana University.
Ross, J. 1972. "A Reanalysis of English Word Stress". In M. K. Brame (ed.) *Contributions to Generative Phonology*, 229-323. Austin: University of Texas Press.
Rubach, J. 1981. *Cyclic Phonology and Palatalization in Polish and English*. Warszawa: Wydawnictwa Uniwersytetu Warszawskiego.
Saciuk, B. 1969. „The Stratal Division of the Lexicon". *Papers in Linguistics 1*. 464-532.
Santen, A. van and J. W. de Vries 1981. "Vrouwelijke Persoonsnamen op *-ster*". *Forum der Letteren 22*. 115-125.
Sapir, E. 1921. *Language*. New York: Harcourt, Brace.
Sassen, A. 1980. "Over Filologen en Analfabeten". In *Handelingen van het 36e Nederlands Filologencongres*. Amsterdam: Benjamins.
Satkiewicz, H. 1969. *Produktywne typy słowotwórcze współczesnego języka polskiego*. Warszawa: Państwowe Wydawnictwo Naukowe.
Schenker, A. 1954. "Polish Conjugation". *Word 10*. 469-481.
Schultink, H. 1978. "*Ambassadrice* contra *masseuse*. Afgeleide [+vrouwelijke] Nederlandse Nomina en hun Beschrijving". *De Nieuwe Taalgids 71*. 594-601.
Seiler, H. 1975. "Language Universals and Interlinguistic Variation". Arbeitspapiere, Institut für Sprachwissenschaft: Universität Köln.
Seiler, H. (ed.) 1978. *Language Universals*. Tübingen: Narr.

Selkirk, E. O. 1980. "The Role of Prosodic Categories in English Word Stress". *Linguistic Inquiry 11*. 563-605.

Selkirk, E. O. 1982. *The Syntax of Words*. Cambridge, Mass.: The MIT Press.

Selkirk, E. O. 1984. *Phonology and Syntax. The Relation Between Sound and Structure*. Cambridge, Mass.: The MIT Press.

Sieczkowski, A. 1957. *Struktura słowotwórcza przymiotników czeskich i polskich. Studium porównawcze*. Wrocław: Ossolineum.

Siegel, D. 1974/1978. *Topics in English Morphology*. New York: Garland Publishing.

Smółkowa, T. and Tekiel D. 1977. *Nowe słownictwo polskie. Przymiotniki i przysłówki*. Wrocław: Ossolineum.

Stachowiak, F.-J. 1978. "Some Universal Aspects of Naming as a Language Activity". In H. Seiler (ed.), 207-228.

Stemberger, J. 1981. "Morphological Haplology". *Language 57*. 791-817.

Stephany, U. 1980. "Zur psychischen Realität der Dimension der Deskriptivität". In G. Brettschneider and C. Lehmann (eds), 549-555.

Strauss, S. L. 1979a. "An Output Condition on Prefixation in German". *Glossa 13*. 51-68.

Strauss, S. L. 1979b. "Stress Assignment as Morphological Adjustment in English". Paper presented at the Winter LSA Meeting, Los Angeles. *Linguistic Analysis 11*. 419-427 (1983). Reprinted in Berendsen. E. et. al. 1984. *Generatieve Fonologie Reader*. Leiden; Martinus Nijhoff.

Strauss, S. L. 1979c. "Against Boundary Distinctions in English Morphology". *Linguistic Analysis 5*. 387-419.

Strauss, S. L. 1980. "How Abstract is English Morphology?". *Glossa 14*. 89-112.

Strauss, S. L. 1982a. *Lexicalist Phonology of English and German*. Dordrecht: Foris Publications.

Strauss, S. L. 1982b. "On the Theory of Word-Formation and its Role in Phonological Analysis". *Linguistic Analysis 9*. 253-276.

Strauss, S. L. 1982c. "On 'Relatedness Paradoxes' and Related Paradoxes". *Linguistic Inquiry 13*. 695-700.

Szober, S. 1962. *Gramatyka języka polskiego*. Warszawa: Państwowe Wydawnictwo Naukowe.

Szpyra, J. 1985 "Cyclic Phonology – A Counterproposal to the *SPE* Model?". *Studia Gramatyczne* 6. 97-131.

Szymanek, B. 1981. *Morphological and Phonological Constraints on Suffixational Derivation of Polish and English Adjectives*. Unpublished Ph. D. dissertation, Lublin: M. Curie-Skłodowska University.

Szymanek, B. 1985a. *English and Polish Adjectives. A Study in Lexicalist Word-Formation*. Lublin: Katolicki Uniwersytet Lubelski.

Szymanek, B. 1985b. "On Intermorphic Extensions". In E. Gussmann (ed.), 175-191.

Szymanek, B. 1985c. "Disjunctive Rule Ordering in Word Formation". *Papers and Studies in Contrastive Linguistics 20*. 45-64.

Tixonov, A. N. 1975. "Členimost' i proizvodnost' slov tipa *fizik*". In E. A. Zemskaja (ed.) *Razvitie sovremennogo russkogo jazyka*, 186-191. Moskva: Nauka.
Tokarski, J. 1951. *Czasowniki polskie*. Warszawa: Państwowe Wydawnictwo Naukowe.
Tompa, J. 1968. *Ungarische Grammatik*. Budapest: Akadémiai Kiadó.
Trier, J. 1931. *Der deutsche Wortschatz im Sinnbezirk des Verstandes*. Heidelberg: Winter.
Vergnaud, J.-R. 1977. "Formal Phonology". In R. E. Butts and J. Hintikka (eds) *Basic Problems in Methodology and Linguistics*. Dordrecht: Reibel.
Vogel, I. 1982. *La sillaba come unità fonologica*. Bologna: Zanichelli.
Williams, E. 1981. "On the Notions 'Lexically Related' and 'Head of a Word'". *Linguistic Inquiry 12*. 245-274.
Wurzel, W. 1977. "Zur Stellung der Morphologie im Sprachsystem". *Linguistische Studies 35*. 130-165.
Wurzel, W. U. 1980. "Some Remarks on the Relations Between Naturalness and Typology". *TCLC 20*. 103-113.
Wurzel, W. U. 1981. "Problems in Morphonology". In W. U. Dressler et al (eds), 413-434.
Wüster, E. 1979. *Einführung in die allgemeine Terminologielehre und terminologische Lexikographie I*. New York: Springer.
Yip, M. 1982. "Reduplication and CV-Skeleta in Chinese Secret Languages". *Linguistic Inquiry 13*. 637-662.
Zemskaja, E. A. 1973. *Sovremennyj russkij jazyk. Slovoobrazovanie*. Moskva: Prosveshschenie.
Zonneveld, R. M. van 1981. "Affix-Valentie". *GLOT 4*. 267-302.
Zwicky, A. 1978. "On Markedness in Morphology". *Sprache 24*. 129-143.
Zwicky, A. and G. Pullum 1982. "Inflection vs. Cliticization: English *n't*". Bloomington, Ind.: Indiana University Linguistics Club.