PHONOLOGY

HOW DO PHONOLOGICAL RULES COMPARE?

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The starting point for any contrastive analysis is the existence of linguistic descriptions of the languages to be compared with the obvious proviso that the descriptions must be carried out within the same framework. If the phonological component of a grammar consists of rules that derive phonetic manifestations from underlying phonological representations then the problem facing the contrastive linguist is to determine precisely what it means to say that rules in the two or more languages can be compared, i.e., he must explicate the term "rule comparability". The present paper is an attempt to approach this problem.

It can be assumed without much argument that there exists a universal, restricted class of possible types of rules which include among others rules of palatalisation, glottalisation, assimilation, dissimilation, nasalisation, denasalisation, spirantisation, stress, tone and intonation placement, vowel and consonant deletion, vowel and consonant insertion, etc. Now assume that we find identical or similar rules in two languages and that these rules belong to one of the above-mentioned formal types. How exactly do we go about comparing them? Clearly placing two rules side by side makes no comparison at all, provided that such an operation is in general feasible, as can be seen rather drastically by considering the rules of stress placement in such languages as Polish and English. Much more is needed to render a contrastive study of phonological rules a meaningful enterprise. In what follows we shall try to tackle this question by considering the degemination rule in Polish and English. At first we shall provide evidence justifying such a rule within the phonology of each language independently, and against this background we shall discuss the notion of "rule comparability". The discussion of the rules is based on Gussmann (1973) and Chomsky and Halle (1968) for Polish and English respectively. We pay more attention to the discussion of the Polish

phenomena because these have been studied to a much lesser extent than the corresponding problems in English.

Let us analyse the phonological processes involved in the distribution and origin of the adjective-forming suffixes -*ski*, -*cki* in Polish. Consider synchronic the following sets of alternations:

I a. juhas-juhaski, Suez-sueski, Kaukaz-kaukaski, Anglosas-anglosaski, Hindus-hinduski, Prusy-pruski, Francuz-francuski, towarzysz-towarzyski, papież-papieski, mąż-męski

  b. Norweg-norweski, Czech-czeski, Elbląg-elbląski, Nowy Targ-nowotarski, Norymberga-norymberski, bóg-boski, Włoch-włoski, czarnoksiężnik-czarnoksięski

  c. baba-babski, Kaszub-kaszubski, Rzym-rzymski, car-carski, Warszawa-warszawski, Kraków-krakowski

  d. kardynał-kardynalski, trybunał-trybunalski, diabeł-diabelski, anioł-anielski, poseł-poselski, apostoł-apostolski, Mongoł-mongolski, Cygan-cygański, ułan-ułański, pan-pański, błazen-błazeński, Londyn-londyński

IIa. gromada-gromadzki, sąsiad-sąsiedzki, Szwed-szwedzki, lud-ludzki, wojewoda-wojewódzki, Bermudy-bermudzki, inwalida-inwalidzki, gród-grodzki

  b. rybak-rybacki, łajdak-łajdacki, cwaniak-cwaniacki, prostak-prostacki, Kozak-kozacki, pływak-pływacki, Niemiec-niemiecki, heretyk-heretycki, pijak-pijacki

  c. wariat-wariacki, adwokat-adwokacki, literat-literacki, proletariat-proletariacki, pirat-piracki, asystent-asystencki, aliant-aliancki

On the surface it would seem that we are dealing with two suffixes: -*sk*- and -*ck*-. Observe, however, that their distribution is well-defined, if somewhat peculiar, in that -*ck*- appears if it is added to underlying dental stops or the voiceless velar stop[1]. In all other cases we get the suffix -*sk*-. Consequently we can say that we have phonologically only the suffix -*sk*- which is modified in different contexts[2]. However, the conclusion that the adjective-forming suffix is phonologically -*sk*- turns out to be in need of modification if we consider cases where it is added to the underlying liquid /l/ or nasal /n/. These two consonants undergo palatalisation to /l, ń/ and, hence, we postulate the underlying suffix to be -*isk*-; the vowel of the suffix is deleted after palatalising the

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[1] *Malbork-malborski* is exceptional in this respect as is *Egipt-egipski*. This may be due to the consonant preceding the final stop.

[2] We take the suffix to be /sk/ phonologically rather than /ck/ not only because /ck/ is found only after three consonants /t, d, k/ but also because the spirant /s/ appears freely in phonological representations while the affricate /c/ is derived either from underlying /t/ or /k/ in a number of distinct cases. It is possible to argue that /c/ does not appear at all in phonological representations.

preceding segment[3]. Hence, *londyński* and *mongolski* are derived from phonological /londin+isk+/ and /mongoł+isk+/ respectively. In the case of anterior noncoronal consonants we get subsequent depalatalisation by rule

$$(1) \quad \begin{bmatrix} +\text{anter} \\ -\text{coron} \end{bmatrix} \rightarrow [-\text{high}] / \_\!\_ \begin{Bmatrix} C \\ \# \end{Bmatrix}$$

This rule, which is quite general in Polish, is responsible for the absence of palatalised labials before consonants and in word final position, although labials are quite often followed by front vowels in these positions phonologically. Thus *karp*, *gołąb* must be represented phonologically as /karpi/, /gołoNbi/ because the final stop is palatalised in other forms, e.g. *karpia*, *gołębia*.

The surface forms *babski*, *chamski* are thus derived from underlying /bab+isk+/, /cham+isk+/ by palatalisation, vowel deletion, and depalatalisation. The situation is more complex if we turn to those cases where the suffix is added to underlying coronal continuants (Ia) or the voiced velar stop and velar spirant (Ib). Words like *saski*, *francuski*, etc., should have the relevant part represented phonologically as /s+isk/, /z+isk/ where palatalisation and subsequent deletion of the vowel produce /ssk/ and /zsk/. In the case of the voiced velar stop or the velar continuant we derive /žsk/ and /šsk/ as in /bog+isk/, /włoch+isk/. The phonetic representation requires rules which would have the following simplifying effects on the consonantal clusters:

$$\begin{aligned} \text{śs} &\rightarrow \text{s} \\ \text{źs} &\rightarrow \text{s} \\ \text{žs} &\rightarrow \text{s} \\ \text{šs} &\rightarrow \text{s} \end{aligned}$$

Stated formally this turns out to be a fairly regular simplification rule:

$$(2) \quad \begin{bmatrix} -\text{anter} \\ +\text{coron} \\ -\text{sonor} \end{bmatrix} \rightarrow \emptyset / \_\!\_ \begin{bmatrix} +\text{anter} \\ +\text{coron} \\ +\text{strid} \end{bmatrix}$$

The situation is really baffling if we try to construct similar rules for words in group II. The relevant bits in *rybacki*, *gromadzki*, *piracki* are phonologically /k+isk/, /d+isk/, /t+isk/. Palatalisation and vowel deletion result in /čsk/, /dźsk/, /ćsk/ and at least one new rule is necessary, viz. one turning /s/ into a

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[3] The different palatalisation rules as well as the rule of vowel deletion are assumed here without justification. They are discussed in some detail in Gussmann (1973).

non-continuant after a non-continuant:

$$(3) \quad \begin{bmatrix} +coron \\ + +strid \end{bmatrix} \rightarrow [-cont] \quad / \quad \begin{bmatrix} -anter \\ +strid \\ -cont \end{bmatrix} \_\_$$

Rule (3) turns /čs, dźs, ćs/ into /cc, dzc, cc/ and if it is ordered before rule (2) no additional cluster simplification will be necessary. There is in Polish a general rule of palatal assimilation which can be presented in a highly simplified form as:

$$(4) \quad \begin{bmatrix} +obstr \\ +coron \end{bmatrix} \rightarrow \begin{bmatrix} \alpha \, anter \\ \beta \, distrib \end{bmatrix} \quad / \quad \_\_ \begin{bmatrix} \alpha \, anter \\ \beta \, distrib \end{bmatrix}$$

This rule is necessary to account for the alternation of the palatal quality of the first spirant in words like *most-moście, pasta-paście, poszczę-pościsz, puszczę-puścisz*, etc. If we allow rule (4) to apply before rule (2) but after (3) we will derive sequences of identical consonants, i.e. rules (3) and (4) (followed by voice assimilation which we disregard here) will have the following effect on the clusters under discussion:

$$ \text{śs} \rightarrow \text{ss} $$
$$ \text{źs} \rightarrow \text{ss} $$
$$ \text{žs} \rightarrow \text{ss} $$
$$ \text{šs} \rightarrow \text{ss} $$
$$ \text{ćc} \rightarrow \text{cc} $$
$$ \text{dźc} \rightarrow \text{cc} $$
$$ \text{ćc} \rightarrow \text{cc} $$

We thus obtain a sequence of two identical consonants. The phonetic representation can be achieved by positing a rule deleting one of two identical consonants, i.e.

$$(5) \quad \begin{bmatrix} +conson \\ -nasal \\ \alpha \, F \end{bmatrix} \rightarrow \emptyset \quad / \quad \begin{bmatrix} +conson \\ -nasal \\ \alpha \, F \end{bmatrix} \_\_ $$

where F stands for "features".

The correct order of rules is now: 3, 4, 5. Rule (2) can be dispensed with. (The last rule is inadequate, in any case as it would incorrectly, simplify

* We have no evidence to indicate whether it is the first or the second of the two identical consonants that is deleted. We do not even know whether this problem is at all relevant.

the clusters in *moście, poście*, etc.). Degemination rule (5) must contain the specification (−nasal) as sequences of nasals (i.e. long nasals) are possible in Polish, e.g. *panna, wanna, ranny, gamma*, etc.[5]

It should be noted that the assimilations and simplifications discussed above are not restricted to the suffix *-isk-* only; the same is true, for example, in the case of the suffix *-istv-*. On the basis of our considerations so far we could predict that underlying /d, k, t/ in contact with the suffix *-istv-* will result in *-ctv-* while all other consonants will result in *-stv-*. This is indeed the case as the following sets of words clearly document:

III. pijactwo, ptactwo, próżniactwo, awanturnictwo, maniactwo, żebractwo, kozactwo, robactwo
    wariactwo, bractwo, opactwo, piractwo, natręctwo, szlachectwo, bogactwo, sieroctwo
    władztwo, sąsiedztwo, śledztwo, inwalidztwo, krótkowidztwo, samorództwo, województwo

IV. czarnoksięstwo, męstwo, papiestwo, obywatelstwo, sowizdrzalstwo, warcholstwo, chuligaństwo, błazeństwo, posłuszeństwo, ubóstwo, niedołęstwo, żelastwo, bóstwo

The regularities discussed above can be illustrated by the derivation of *bóstwo, ptactwo, sąsiedztwo*:

underlying:	bog+istv+o	ptak+istv+o	soNsed+istv+o
palatalisation	bož+istv+o	ptač+istv+o	soNśedź+istv+o
i-drop	bož+stv+o	ptač+stv+o	soNśedź+stv+o
rule 3		ptac+ctv+o	soNśedź+ctv+o
rule 4	boz+stv+o	ptac+ctv+o	soNśedz+ctv+o
voice assimil.	bos+stv+o		soNśec+ctv+o
rule 5	bos+tv+o	ptac+tv+o	soNśec+tv+o
other rules	bustfo	ptactfo	sowśectfo

One interesting observation emerges from the discussion of the deletions. Velars before the suffix *-isk-/-istv-* seem to fall into two groups, one comprising the velar spirant and the voiced velar stop and the other consisting of the voiceless velar plosive only where the former results in *-sk-/-stf-* and the latter in *-ck-/-ctf-* (cf. sets Ib and IIb above). Thus, on the surface, it would seem that the velars form an **unnatural** class with respect to the suffixes, i.e., one would expect all of them behave in the same way by virtue of being velars, or at least one would want to group /k/ and /g/ together by virtue of

⁵ There are a few exceptions to the degemination rule: *lekki* and its derivatives, *dżdżu, dżdżownica*. We also omit from consideration cases like *rozsadzić, poddać, zszyć*, etc., where a word boundary must be inserted after the prefix.

being velar stops. What we find, however, is the voiceless velar spirant and the voiced velar stop classed together with dental continuants as against the voiceless velar stop classed together with dental stops. Deeper scrutiny reveals, however, that the distribution is prefectly regular and can be predicted in advance. Observe that at the phonological level the suffix is -isk-(or -istv-) regardless of what precedes it so that no problem of the natural class arises here. Now, at the stage where the relevant assimilations and deletions apply the underlying /g/ is no longer a stop, or even an affricate, but a spirant due to the specificity of velar palatalisations in Polish. One of the velar palatalisation rules turns the underlying voiced velar stop, into the affricate, /dž/ which further undergoes spirantisation to /ž/ unless it is preceded by a continuant. Thus we get numerous alternations like *bóg-bożek, droga-dróżka, krąg-krążę* where the palatal spirant is derived from an underlying velar through palatalisation and spirantisation and a few forms like *mózg-móżdżek, drobiazg-drobiażdżek, rózga-różdżka*, where the underlying velar stop results in a palato-alveolar affricate because it is preceded by a spirant. Thus /g/ in words like *bóstwo, norweski* is a continuant at the relevant stage in the derivation and consequently it belongs together with underlying continuants /s, z, ch/ forming a natural class with respect to the rules, as against /k, t, d/ which at no stage in the derivation are continuants. The existence of similar phenomena provides empirical justification for the reality of intermediate stages between the phonological and phonetic representations. What this argument shows for our immediate purposes is that the degemination rule is placed quite late in the series of ordered rules, at least after the major palatalisation and assimilation rules have been applied. It is also for this reason that forms like *paryski, towarzyski, męski* are here treated on a par with those that end in a spirant in the environment of the rules of assimilation and simplification, although we have no evidence as to their phonological status, i.e., *Paryż* might be derived from a phonological representation with a final /g/ or /z/ followed by the front /j/-glide; it certainly could not be derived from an underlying /rj/ because then the adjective would be **paryrski*. For the purpose of the degemination rule we do not have to make up our mind as to whether *Paryż* should be represented phonologically with a /gj/ or /zj/ cluster — what is relevant is that at the stage in the derivation where the rules apply, the final segment must be a spirant.

The evidence that we have adduced appears to justify the existence of the degemination rule (5) in Polish. The rule makes it possible to derive in a general way a number of words which would otherwise have to be treated as largely irregular. It furthermore finds some additional support in the phonological behaviour of the voiced velar stop.

The function of geminates within the phonology of English has been studied in detail by Chomsky and Halle (1968 : 46 - 8, 83, 148 - 9, 221 - 2) and

we shall briefly review some of their arguments. These can be divided into three groups which are connected with the rules of stress placement, vowel tensing and s-voicing.

Considerations of stress placement force us to posit double consonants in words like *caress, harass, remiss*. The final stress in these words can be readily understood if the final consonants are treated as geminates. These create strong clusters and thus make the strings conform to general patterns of English stress-palcement. The word *harass* is particularly interesting as it allows for a variant with penultimate stress. The simplest solution is to assume that the phonological representation of the word contains a single consonant in some idiolects and, thus, the penultimate stress is induced. Chomsky and Halle (1968 : 83) cite interesting examples of stress placement in some adjectives and nouns, e.g.: *cerebellar, morbillous, medullar, vanilla, umbrella* as against *cephalous, perilous, scurrilous, buffalo, metropolis*. The phonetically single (short) /l/ in the former group of words behaves phonologically as if it were a consonantal cluster which prevents the placement of antipenultimate stress while the short /l/ in the latter group has no such effects. For this reason words like *umbrella* are represented phonologically with geminate /ll/ and the stress is assigned in accordance with general principles. A later rule simplifies all geminate sequences of consonants. The same is true not only for the liquid /l/ but also for other consonants as the following examples indicate : *confetti, Mississippi, Kentucky, Philippa*, etc.

Another instance of geminate consonants can be seen in conjunction with rules of vowel tensing and concomitant vocalic alternations. Among the rules there is one which tenses underlying lax vowels if a weak cluster follows producing ultimately phonetic diphthongs as in *futile, mural, punitive, music, gymnasium, magnesium, cesium, cupola, cutaneous*, etc. In a number of cases, however, no tensing seems to occur and the underlying vowel is not subject to the diphthongisation rule as in *cunning, currency, mussel, russet, bucket, putty, Kentucky*. To account for the failure of the tensing rule to apply we postulate underlying geminate consonants. In the case of words like *Kentucky, confetti*, this solution is further confirmed by considerations of stress placement as discussed above.

Effects of the tensing rule can also be observed in conjunction with the s-voicing rule, i.e., there seems to be a general regularity in English to the effect that the intervocalic /s/ gets voiced if the preceding vowel is tense[6], e.g. *Susan, music, Moses, Pusey, rosary, miser, gymnasium*. No voicing occurs if /s/ is preceded by a lax vowel as in *mussel, Rossall, gossamer, gossip, lesson*. Thus s-voicing and vowel tensing ultimately depend upon the presence or absence of underlying double consonants.

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[6] Clear exceptions include: *basic, isolate, Mason, basin, masonery*.

So far we have mentioned cases of geminates which have their source in phonological representations. Chomsky and Halle (1968 : 221-3) argue, however, that geminates arise in intermediate representations due to the operation of earlier rules. Discussing the prefixes *ab-* (e.g. *abduct, absorb, abrupt*), *ad-* (e.g. *adhere, admire, admit*), and *sub-* (e.g. *subdue, subscribe, subtract*) they observe that the final consonant of the prefix has a different value for the feature /coronal/ than the initial consonant of the stem. Furthermore, there are phonetically no prefix-final and stem-initial consonantal clusters agreeing in coronality[7]. This suggests that the latter situation to arise phonologically, the two consonants would have to be completely assimilated and subsequently degeminated. This explanation is offered for the following sets of examples:

prefix **ab-** : *appal, appeal, appear, appease, apply, appoint, appraise, apprehend*

prefix **ad-** : *assume, assist, assign, attest, attend, attempt, attain, adduce, accede, accuse, accept, accelerate, accomplish, accord, accrue, account, aggrieve, agglutinate*

prefix **sub-** : *suffice, suffuse, supply, support, supplant, suppose, suppress succeed, success, succumb, succinct, suggest*

This solution while affording a neat explanation for disparate facts requires that the rule assimilating consonants which agree in coronality be placed before the degemination rule while the degemination rule itself be placed after rules of velar softening and spirantisation. The degemination rule must precede the rule of palatalisation as shown by words like *Russian, Prussian* for otherwise the incorrect cluster /sš/ would be derived. All these bits of evidence taken from different parts of English phonology provide sufficient justification for a rule of degemination which might be formulated in a similar manner to the Polish rule:

$$(6) \qquad \begin{bmatrix} +\text{conson} \\ \alpha \text{ F} \end{bmatrix} \rightarrow \emptyset \ / - \begin{bmatrix} +\text{conson} \\ \alpha \text{ F} \end{bmatrix}$$

Having established the existence of a degemination rule in both Polish and English[8], we now turn to the basic question of this paper — in what sense can these two rules be said to be comparable? The existing literature on contrastive generative phonology is very scanty and Di Pietro's (1972: 135-58) treatment is probably the most extensive one.

His discussion, although very much needed, is far from satisfactory as

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[7] Possible exceptions: *submit, submerge, subvert, adsorb.*

[8] The following discussion does not depend crucially on the correctness of every detail of the analyses presented above for we are interested in the general issue of rule comparability rather than in details of the two degemination rules.

it does not go beyond elementary statements. Di Pietro concentrates on what he calls phonological redundancy rules (the earlier term was "morpheme structure rules") and he also takes up the problem of phonological characterisation rules. These are apparently meant to correspond to Chomsky and Halle's phonological rules as indicated by the examples cited to illustrate them (pluralisation in English and Spanish, partial nasal assimilation in a dialect of Spanish). Di Pietro's treatment suffers from two basic failings: its depth and scope are extremely limited and the problems actually discussed are quite elementary or even trivial. Furthermore, and this we would take to be the fundamental failing, his treatment is hardly contrastive at all for, as we noted at the outset, placing two rules side by side does not make a contrastive study, as two completely identical rules may be so differently interrelated with other rules in the two languages that the formal or structural similarity vanishes into thin air. This is indeed the case with our degemination rules. On the face of it they look quite similar, the only difference being that the Polish rule requires the exclusion of nasals from the domain of the rule. This purely formal rules comparison not only fails to bring out any specific properties of the rules but it in fact goes a long way to obscure the whole issue, for the two rules are drastically different in spite of their superficial similarity. In order to see this we must consider the scope of rule applicability.

The first point we would like to raise is the occurrence of geminates in underlying representations. In English, word internal double consonants are quite common phonologically, while in Polish basically only nasals can occur there. This means that the English degemination rule applies at least partly to sequences of consonants provided by the input representations and, hence, the sequences are largely unpredictable, while in Polish degemination applies to outputs of earlier rules and this fact considerably limits its generality. Our analysis provides evidence for the statement that in English the majority, if not all, consonants can appear as geminates phonologically and, hence, they undergo the rule in question; while in Polish it is basically only the strident obstruents which satisfy the structural description of the rule. This difference in the scope of applicability finds no formal reflection in the rule itself because the theory of phonology requires that the rules be constructed in the simplest possible way. To take an example, the degemination rule in Polish need not specifically exclude /dd/ or /bb/ clusters from its domain simply because at the time when the rule applies no such sequences will be available for the rule to effect. This means that from the point of view of Polish phonology alone, the degemination rule can be formulated in the most general terms. The addition of the specification /+strident/ would pointlessly complicate the rule. For contrastive purposes, however, the simplest formulation of the rule may be a hindrance in appreciating the scope of its applicability. The generality of the rule can be affectedly compared if, in

addition to the structural description of the rule itself, the relevant aspects of phonological representations are taken into account.

It was shown above that the degemination rule in Polish applies to sequences produced by earlier rules of assimilation and that some simplifications in English affect clusters derived through the operation of complete assimilation (e.g. *assume, attest*) or velar softening and spirantisation (e.g. *excite, exceed*). This brings the next major questions which any contrastive phonological analysis must face, viz. the interaction of the rule we compare with other rules and the depth at which our rule is ordered.

It goes without saying that although all rules are equal, some are more equal than others. The relative importance of a rule can be stated only in impressionistic terms, which, however, does not detract from the reality of the problem. Thus a rule which tenses all vowels before a CV sequence is more important than a rule tensing only front vowels before a CVCCV sequence because the latter is less general than the former. Likewise, a rule placed early in the ordering is more important than one found towards the end of the phonology if only because the former will feed or bleed (to use Kiparsky's (1968) terminology) a larger number of successive rules than the latter.

Taking these factors into account, we note that the English degemination rule is fed by rules of complete assimilation, velar softening and spirantisation. Of these at least velar softening and spirantisation are crucial rules in English; and, furthermore, complete assimilation and velar softening are towards the very beginning of the phonology. The degemination rule itself bleeds the rule of palatalisation (e.g. *Russian*), i.e., one, which is also of paramount importance in English. The Polish degemination is fed by two rules of assimilation of which only one, i.e. rule (4) assimilating the palatal quality of adjacent consonants, is of cross-lexical generality. What is more important is the fact that the Polish rule is ordered quite late, in particular after all the major phonological processes including palatalisations and assimilations. This fact itself assigns a clearly secondary status to the rule within Polish phonology.

We have considered a rule which is very simple formally and remarkably similar structurally in both Polish and English in order to make the dangers involved in the simple-minded rule comparison all the more conspicuous. It is all too easy to pick two rules, say of palatalisation, where in one language all consonants are palatalised before any front vowel and in the other only dental stops are palatalised before /i/ and claim, by comparing their structural descriptions, that they are very different or very similar, whatever the case may be. We are far from rejecting the importance of formal comparison; in fact some degree of formal similarity is a prerequisite to any comparison. But the recognition of formal similarity is only the very first step which, if taken in isolation, may be completely misleading. In this paper we have tried to show that in order for contrastive phonological analysis to yield meaningful results, the following factors, apart from formal rule comparison, must be taken into account:

1) the scanning of strings meeting the structural description of the rule with phonological representations, i.e., is the rule exclusively fed by other rules or do phonological representations themselves require the rule?
2) interaction with other rules of the phonology, i.e., what rules feed or bleed it? what rules does it feed or bleed?
3) depth of ordering, i.e., is the rule placed relatively early or relatively late?
3) depth of ordering, i.e., is the rule relatively early or relatively late within the phonology?

Rule comparability as presented above calls for one more comment. The notions of feeding and bleeding order which we find fundamental for contrastive phonological purposes have been modified here in comparison to Kiparsky's original proposal. For Kiparsky feeding and bleeding relations obtain rules directly adjacent in the linear sequence. Comparing the English rules discussed above and their relative ordering established by Chomsky and Halle (1968: 38 - 45) it is easy to notice that the way we approach rule interaction comes very close to Anderson's concept of pairwise orderings as developed in a number of recent publications (Anderson 1970, 1972, 1974). This suggests that the degree of significance achieved by contrastive phonology may fundamentally depend upon the choice of the "best theory" to underlie the compared descriptions.

REFERENCES

Anderson, S., R. 1970. "On Grassmann's law in Sanscrit". *Linguistic inquiry 1.* 387 - 96.
Anderson, S., R. 1972. "Icelandic U-umlaut and breaking in a generative grammar". In Firchow, E. 1972. 13 - 30.
Anderson, S., R. 1974. *The organization of phonology.* New York: Seminar Press.
Bach, E., and Harms, T., R. (eds). 1968. *Universals in linguistic theory.* New York: Holt, Rinehart and Winston.
Chomsky, N., Halle, M. 1968. *The sound pattern of English.* New York: Harper and Row.
Di Pietro, R. 1972. *Language structures in contrast.* Rowley, Mass: Newbury House Publishers.
Gussmann, E. 1973. *A phonology of consonantal alternations in Polish and English.* Unpublished Ph. D. dissertation.
Firchow E. et al. (eds). 1972. *Studies for Einar Haugen,* The Hague: Mouton.
Kiparsky, P. 1968. "Linguistic universals and linguistic change". In Bach, E., and Harms, T. R. 1968. 171 - 205.