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EDITORS

J N GREEN
R O U STRAUCH

MAY 1975

DEPARTMENT OF LANGUAGE UNIVERSITY OF YORK HESLINGTON YORK

NOTES AND DISCUSSION

RULE INVERSION: HERMANN PAUL ALREADY HAD AN IDEA-R-OF IT*

Frans Plank

(Universität Bielefeld)

1. According to its alleged discoverer, Theo Vennemann, rule inversion belongs to the more recent insights in the history of historical linguistics. Nevertheless, Vennemann does not insist on his chronological priority in the discovery of this 'mechanism of grammar change' (Vennemann, 1972a:209) but acknowledges several forerunners, Henning Andersen, William Wang, and Jacob Grimm ('Rückumlaut') being among them, who independently investigated phonological processes and their reversals, without presumably appreciating the import of rule inversion for the theory of language and grammar change. At about the same time as Vennemann, Raimo Anttila (1972:201-2) deals with rule inversion or 'inverse derivation' as well, without mentioning Vennemann. But as he ascribes to Vennemann the rediscovery of rule inversion for transformational-generative linguistics in Anttila (1974:154-61), it appears to be Vennemann who has to be credited with first (re-)emphasizing and (re-)establishing the concept of rule inversion, with naming it thus, and with inaugurating current transformational-generative research along these lines. These are only relative merits, however, if Anttila's (1974:156) claim that 'in fact, linguists have *always* thought that rule inversion is one of the simplest things' (my emphasis) is not completely exaggerated.

The purpose of this note is to bolster up this contention of Anttila's by focusing upon another respectable, though so far neglected, ancestor of rule inversion, viz. Hermann Paul. As a by-product of this historiographic rectification it will be indicated how, from a neogrammarian perspective, the analogical nature of (at least certain kinds of) rule inversion, recognized by Vennemann (1972a:241), can be rendered more perspicuous.

2. First I shall outline very briefly Vennemann's idea of rule inversion. My account is based on, and perhaps oversimplifies, Vennemann (1972a:1974).

Due to historical change, a certain (phonological, morphological, or syntactic) form A with the meaning M in a language at a stage t_0 develops into two variants, A and A', at stage t_1, both with the meaning M. More specifically, the grammar at t_1 has added a rule that produces the variant A' in certain but not in all the possible environments of the original A. At t_1, the synonymous, semiotically equivalent alternants A and A' thus occur in mutually exclusive environments, A being the basic and A' the derived form. The synchronic rule $A \rightarrow A'/\overline{E}$, which is productive at t_1, parallels the diachronic rule, or rather 'diachronic correspondence' (Andersen, 1973:790), $A > A'/\overline{E}$, which thus engenders a violation of the 'one meaning - one form' principle.[1] If the derived form A' occurs at t_1 more frequently (type- or token-wise) than A, or in the semantic, syntactic, or morphological

primitive category, new learners of the language at stage t_2, in trying to imitate the language of their models, i.e. the output of the grammar at t_1, may interpret A' as the basic form, and derive A in the environment $\overline{\overline{E}}$ from it, if they do not level out the alternation altogether according to the 'one meaning - one form' principle. At t_2 the grammar has therefore added a rule $A' \longrightarrow A/\overline{\overline{E}}$, which is the inverse of the diachronic rule that was also productive synchronically at t_1.[2] Notice that the grammar at t_1 differs from that at t_2 whereas the language generated by the two grammars has not changed at all. In Andersen's (1973) terms, this is an instance of abductive change.

3. 'The vulgar shorten *ow* and pronounce the *o* obscurely, and sometimes as if followed by *r*, as *winder* and *feller*, for *window* and *fellow*; but this is almost too despicable for notice.' (Walker's Pronouncing Dictionary 1791; quoted from Jespersen (1961:370)). Nevertheless, Vennemann (1972a) did notice it, and the intrusive *r* is among the many examples he uses to illustrate rule inversion. It is the only one that will interest us here. (Anttila (1972:201) draws on this particular example as well.)

1,[3] Certain English dialects have a synchronic consonant deletion rule

(1) $r \rightarrow \emptyset \; / \; V \_\_ \left\{ \begin{matrix} C \\ \# \end{matrix} \right\}$

which parallels a diachronic process, and which in certain environments, creates phonetically conditioned alternations r~Ø. The reason for this innovation need not concern us here. As examples like *boredom* [bɔdəm] vs. *boring* [bɔriŋ] and *the water may* [wɔtə mey] vs. *the water is* [wɔtəriz] show, zero is being derived from underlying postvocalic /r/ unless a vowel follows, not only word-internally but across word boundaries that are not phonetically manifest as well. Later, and perhaps in other dialects, this final *r*, which is not deleted by rule (1), apparently is 'reinterpreted as a hiatus breaker rather than as part of the word to which it historically belonged' (Vennemann, 1972a:216), and morphemes such as *water* are relexicalized without final /r/. Accordingly, deletion rule (1) is reversed into a consonant epenthesis rule (2) that is operative, in certain words, in the complementary environment of rule (1), viz. before vowels.

(2) $\emptyset \rightarrow r \; / V \_\_ \# V$

Thus far, the grammar has changed though its output, language, has not. The alternation r ~ Ø still is non-automatic, as it shows up in quite a restricted set of words only. But as rule (2) functions synchronically to create preferred syllable structures CVCV it may be overgeneralized to words that historically never had final *r*'s, such as *idea*; hence the intrusive, unetymological *r* in cases such as *idea is* [aydiəriz] in New England and southern British dialects.

Here the 'principle of the dominance of semantically primitive categories' is not at work, which otherwise is considered to be 'fundamental for rule inversion' by Vennemann (1972a:237). Rather this case of rule inversion is motivated phonetically, although higher frequency of the alternant with a following non-vowel might also be a factor. Thus it cannot be classified as an instance of grammar change by way of coneptual analogy, contrary to Vennemann (1972b:202) where rule inversion is listed indiscriminately among the conceptually motivated simplifications of grammar. Likewise Anttila's (1974:155) observation that 'Vennemann's work can be taken again as an application of Kuryłowicz' laws of analogy' does not apply to this instance, as Kuryłowicz' (1945-49) laws are concerned with functional and formal bases of analogical formations, and rest essentially upon the 'principle of the dominance of semantically (and morphologically) primitive categories'.[4]

4. The case of the intrusive *r* has been touched upon every now and then in the literature- see Jespersen (1961:370-73) for an exposé of sundry treatments of it. Generally, these arguments are concerned mainly with whether the intrusive *r* is socially acceptable or vulgar in various English dialects, and not so much with explanatory grammatical accounts of it. That the existence of such doublets as *dear Paul* [diə] vs. *dear Ann* [diər] 'naturally leads to the insertion of an unetymological [r] between a word ending in one of the same sounds [i.e. vowels - FP] and a word beginning with a vowel' is the only comment offered by Jespersen (1961:370) himself. This evaluation, however, does not hold true of Hermann Paul (1968), who considers various sandhi phenomena within an analogical framework that is - more or less - characteristic of the neogrammarian position.[5]

According to Hermann Paul, the rule mechanism and hence the creative capacity of grammar, in particular of morphology and syntax, is based on the human ability to analogize, on the association of elements of the language (or grammar) into material and formal groups. Proportional equations are the devices he uses to diagram the patterns of similarities and dissimilarities that the groups are made up of. Solving proportional equations with single terms yet unknown can then be regarded as the creative, combinatory activity of the speaker (and hearer) in using his language. One type of proportional group is labelled 'material-phonetic' or 'etymological-phonetic' by Paul (1968:108). The members of its proportions are etymologically related words, which are related semantically and phonetically as well. In this category of proportion, the semantic similarity of the members of each proportion is accompanied by a particular phonetic dissimilarity that occurs quite regularly in every proportion of the group. One example Paul offers is

Spruch : *Sprüche* :: *Tuch* : *Tücher* :: *Buch* : *Büchlein* :: etc.

where the phonetically conditioned alternation of velar [x] and palatal [c] can be abstracted as the basis of the proportional equation.[6] Unlike the semantically identical material elements, viz. word stems, the formal elements, viz. various kinds of suffixes, are per se of no importance here. What is

relevant is the phonological property of inducing umlaut in the stem vowel, shared by all of them. The synchronic alternation x ~ ç is brought about by sound change, historically, according to Paul (1968:117). As long as it is synchronically productive ('lebendiger Lautwechsel', Paul, 1968:117), the etymologically-phonetically based equation serves to predict these alternations, which certainly are not learnt for each instance anew.

Sandhi phenomena, 'sentence-phonetic alternations' (Paul, 1968:120, 'satzphonetische Doppelformigkeit'), are the area of grammar where, in Paul's view, etymological-phonetic proportions are most productive. Hermann Paul first of all observes that such synchronic alternation rules parallel diachronic developments. 'Groups of etymological-phonetic proportions, in general, generate such forms as could also have been produced by the underlying sound change' (Paul, 1968:118 - my translation). Such is the case with the diachronic loss of postvocalic, preconsonantal *r* in certain English dialects, which synchronically results in a 'lebendiger Lautwechsel' in word-final environment. Novel forms may arise, however, that do not mirror the diachronic sound change ('Lautwandel') in question, by means of creative utilization of proportions, and by changing the mode of their application (cf. Paul, 1968:118). One of the causes Hermann Paul adduces to account for such sandhi alternants that have no historical counterparts is 'an inversion of the proportions not really justified' (Paul, 1968:118-19, 'eine eigentlich nicht berechtigte Umkehrung der Proportionen').

Thus, Hermann Paul, like Theo Vennemann, invokes rule inversion to handle the intrusive *r* in English and other languages - as will be demonstrated in detail immediately - the only difference being that Paul's rules are proportional equations that are supposed to depict directly the bases of analogical formations, whereas in Vennemann's framework it is not the rules themselves but rather some meta-principle that provides the analogical motivation.

In the English case (cf. Paul, 1968:119), sound change - loss of final postvocalic *r* - actuates a productive alternation r~∅. In consequence, etymological-phonetic proportions can be established, for instance

$$wɔtɔr/\ \overline{\overline{E}}\ :\ wɔtɔ/\ \overline{E}$$

with $\overline{\overline{E}}$ = _#V, and $\overline{E}$ = _#C.

The first term of the proportion, occurring in prevocalic position, may be considered the (historically) underlying, the second, occurring preconsonantally, the (historically) derived form. Synchronically, there is no need for distinguishing underlying and derived forms in Paul's framework. Rather the proportion can be taken as an implication between two surface forms, stating that words drop their final *r*'s in environment $\overline{E}$, if and only if they end in *r* in environment $\overline{E}$; and this is more than a mere specification of the distribution of *r* and ∅. As more items with final *r* behave similarly,

a proportional equation is arrived at:

wɔtər/ $\overline{\overline{E}}$: wɔtə/ $\overline{E}$ :: betər/ $\overline{\overline{E}}$: betə/ $\overline{E}$ :: iər/ $\overline{\overline{E}}$: X/ $\overline{E}$ :: etc.

Put more succinctly, the basis of this proportional equation is the alternation, recurring in every proportion,

$$r/\ \overline{\overline{E}} \sim \emptyset/\ \overline{E}$$

with $\overline{\overline{E}}$ = V__#V, and $\overline{E}$ = V__#C,

and the equation allows us to infer from any prevocalic final *r* that the word concerned has an alternant form without *r* before consonants; for instance that X = iə.

As this synchronic alternation is phonetically conditioned, with no conceptual factors involved, the use of the external sandhi variant with final *r* may be reinterpreted as hiatus avoidance by speakers who are, of course, unaware of the diachronic sound change that motivated the particular form of the proportion in the first place. 'In consequence, *r* appears in cases where it did not occur historically' (Paul, 1968:119 - my translation). This is made possible by a reversal of the terms of the original proportions, i.e. by rule inversion,

wɔtə/ $\overline{E}$: wɔtər/ $\overline{\overline{E}}$

with $\overline{E}$ = __#C, and $\overline{\overline{E}}$ = __#V.

In its reversed form, the proportion then serves as the model for any word with a final vowel in external sandhi position, hence:

wɔtə/ $\overline{E}$: wɔtər/ $\overline{\overline{E}}$ :: aydiə/ $\overline{E}$: X/ $\overline{\overline{E}}$ :: əmerikə / $\overline{E}$: Y/ $\overline{\overline{E}}$ :: etc.

From this, one gets by deduction, by 'solving the proportional equation':

X = aydiər, Y = əmerikər.

It is obvious that this inversion of the proportional equation at the same time entails an extension of the scope of its application. Any material element, i.e. word, with a final vowel in preconsonantal position now satisfies the 'similarity' criterion required for membership in this particular material-phonetic group.

Hermann Paul (1968:118-19) presents a number of other examples from various languages to illustrate rule inversion. In conclusion, I will just mention the Bavarian case, which is exactly analogous to English intrusive *r*. Final *r*'s are deleted before consonants but not before vowels in certain Bavarian dialects, thus [der arm] 'the arm' vs. [deə huət]

'the hat'. As soon as the terms of the analogical proportion are inverted, *r*'s intrude elsewhere as well, with no etymological justifications:

[viɔri] 'like me', cf. NHG [vi: iç], vs. [viɔ hans] 'like John'
[duɔri] 'do I', cf. NHG [tue iç], vs. [duɔ du:] 'do you'
(imperative)

5. This note was not intended to be a case for proportional analogy. It was to demonstrate, rather, that the concept of rule inversion, rediscovered by Theo Vennemann, was already known to Hermann Paul, who employed it within the framework of proportional analogy. That some time ago some linguist - a neogrammarian, as it happens - has already conceived of rule inversion as a 'mechanism of grammar change' and that his idea bears a close resemblance to a recent proposal eo ipso would hardly be of particular significance, if this early discovery were an isolated and fortuitous observation with no substantive theoretical motivation. It should have become obvious, however, that the neogrammarian and in particular Hermann Paul's conception of grammar, basing it directly on analogical diagrams, in fact did permit valuable insights into the nature of language and grammar change, *pace* Kiparsky (1971:45-52) et al. A reconsideration of Householder's (1971:79) remark, therefore, would not appear to be altogether inappropriate, at least as far as rule inversion is concerned: '... in one sense, rules and features are merely arbitrary fictions (while only the utterances and proportions are real).'

NOTES

* I am grateful to Helen Martucci for reading and improving the manuscript.

1. $\overline{E}$ is the complementary environment of $\overline{\overline{E}}$. $\overline{E}$ and $\overline{\overline{E}}$ together constitute the set of all possible environments of the original A.

2. Anttila's (1974:154; cf. also 1972:201) account may simplify the several stages involved in rule inversion too greatly: 'Rule inversion means that the synchronic derivation is the reverse of the historical change that produced the alternation in question, i.e. history X>Y/__Z, synchronic derivation Y⟶X/__non-Z.'

3. As pause (#) is consonantal phonetically, rule (1) may be simplified by writing the post-*r* environment just as [-voc].

4. Although Vennemann does not deal with it, the historical origin of back-formations (for instance, *edit* from *editor*, Latin *pugna* from *pugnare*, the singular *cherry* from the supposed plural *cherries*, which was borrowed from French singular *cerise*) clearly is due to another case of rule inversion. As Kiparsky (1971:46-47), among others, observes, a rule of derivational morphology is being reversed here, in violation of Kuryłowicz' (1945-49:23) second law of analogy, which predicts the direction of productive morphological derivations to proceed from 'formes de fondation' (for instance, *edit* and *pugna*) to 'formes fondées' (*editor* and *pugnare*).

But Kuryłowicz' (1945-49:25-26) third law, on the other hand, seems to allow for just such cases of inverse derivations. It is in such context, then, that Anttila's remark concerning the relationship between Kuryłowicz' and Vennemann's ideas is in order.

5. Cf. Koerner (1972) for a recent appraisal of Hermann Paul's work and its influence, although Koerner does not treat the issue of rule inversion.

6. Unlike Paul I do not use the equation sign '=' familiar from mathematics, as I do not believe that the proportions of an analogic formula can, strictly speaking, be considered equal. The sign '::', which is employed instead, may be interpreted as 'are similar in a certain respect'.

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