ROBERT D. KING

HISTORICAL LINGUISTICS AND GENERATIVE GRAMMAR

ROBERT D. KING
DEPARTMENT OF LINGUISTICS
UNIVERSITY OF TEXAS

HISTORICAL LINGUISTICS AND GENERATIVE GRAMMAR

PRENTICE-HALL, INC., ENGLEWOOD CLIFFS, NEW JERSEY

TO MARTIN JOOS

 13–389163–1. Library of Congress Catalog Card Number: 69–201
Printed in the United States of America.

Current printing (last number):

10 9 8 7 6 5 4 3

phoneme in either dialect, but its realization is different. The diasystem abstracted from this would be

$$//\text{b} \approx \text{I} \approx \text{t} \approx \cdots \approx \frac{\text{w}[\text{a}\underset{\cdot}{\text{i}}]}{\text{M}[\text{a}\langle\cdot\underset{\cdot}{\text{ə}}]}//$$

In this way we obtain a comparison between the two dialects that displays their points of agreement *and* their points of dissimilarity; and this is done without obscuring either the phonetics or the phonemics of the situation. Several objections, however, have been raised against the diasystem. It does not, nor did Weinreich claim that it did, get around the Saussurean riddle. But even if we ignore this forbidding crisis of theory, serious problems in application arise. The chief question is whether we take account of cognate items in the two dialects when we determine the diasystem. Ignoring cognates altogether leads to the absurdity that any two languages with identical phoneme inventories share the same diasystem. For example, Spanish and Standard Yiddish could be regarded as sharing the identical (phonemic) vowel diasystem // i ≈ e ≈ a ≈ o ≈ u //. This is obviously an undesirable result since the two are not dialects of the same language. On the other hand, requiring the two dialects to have their variants of the same diaphoneme in cognate items rules out the possibility of setting up a diasystem for different languages like Spanish and Yiddish, but again we are led to counter-intuitive results. This has been demonstrated by Moulton (1960:176–177). By imposing this condition he showed that two Swiss German dialects not fifty miles apart and mutually completely intelligible have no more than three shared diaphonemes (the dialects separately have eleven phonemes each), only one of which is fully shared.

This excursus into the problems of structural dialectology was made in order to point up the fact that it is by no means obvious how structural linguistics (or any theory of linguistics) is relevant to the description of the differentiation of dialects. Our real problem is how to account within a single linguistic theory for the essential fact about dialects—that they are in many ways similar—without unduly emphasizing the undeniable fact that they are in some ways different. The task is not an easy one, as the weaknesses of the overall pattern and the diasystem illustrate.

3.2 DIALECT DIFFERENTIATION IN GENERATIVE GRAMMAR

We shall now examine the implications that the goals and form of generative grammatical theory have for the description of dialect differences—a topic that, let it again be emphasized, is as pertinent to historical linguistics as it is to dialectology.

For the time being we shall confine our attention to phonology. We saw in Chapter 2 that our paramount concern as linguists is with the grammar of a

Underlying:	ē	ǣ
ǣ > ē	.....	ē
Vowel Shift:	ī	ī

Under these conditions *compare* would come out [kʰʌmpi:r] and *comparison* would come out [kʰʌmperəsin]. The degree to which changes of this sort would adversely affect communication is open to speculation and could be tested experimentally, but clearly adding the rule /ǣ/ > [ē] at the beginning of the phonological component has brought about a greater deviation from normal pronunciation than results when the same rule is added at the end of the phonological rules.

At present not a great deal is known about the "disruption of mutual intelligibility" criterion. We know that some such tolerance point exists; otherwise we would expect to find cases of radical communication breakdown between speakers belonging to successive generations. But just how to formulate a formal constraint that captures the notion of a point at which mutual intelligibility is disrupted by change is neither easy nor obvious. (It may well be that this constraint should not be stated as a constraint on the grammar at all, but rather should be accounted for elsewhere in the theory.) Languages, or rather their speakers, seem to be able to tolerate seemingly radical changes without slackening their stride to any great extent, yet we know of no language that anywhere in its history has undergone really pathological changes such as "All high vowels become low, all front vowels become back, and all back vowels become mid."

In any case, though evidence is not conclusive, it is plausible to assume that rules tend to be added at the end of the phonological component rather than earlier because communication is thereby less affected. Yet our impression that late rule addition is statistically favored may be due not to some universal principle but merely to insufficient knowledge of sound changes. Numerous instances of rule insertion at points other than the end are attested. Others are shown for Mohawk and Oneida by Postal (1968:245–260).

Before leaving rule addition, it should be observed that this kind of primary change corresponds to what has traditionally been known as *innovation*. Each case presented—Vulgar Latin $\bar{u} > \tilde{u}$, Germanic umlaut, Grimm's Law *b d g* > *p t k*, and Lachmann's Law—falls in the category of innovations in the individual languages.

RULE LOSS. Another kind of primary change can be deduced from the fact that grammars of dialects sometimes differ by the presence or absence of a single rule: it may be that a rule has been lost from the grammar. We shall discuss two such cases here—one from Yiddish, the other from Gothic. We begin with the Yiddish example since the spoken language is still available to us. (Cf. Kiparsky 1965 and Kiparsky 1968b.)

Middle High German, from which Yiddish dialects derive ultimately though not directly, had a rule that devoiced final obstruents: we posit this rule on the basis of Middle High German alternations such as *gap* 'he gave' : *gāben* 'we gave', *tac* 'day' : *tage* 'days', *sneit* 'he cut' : *snīden* 'to cut'. In word-final position the contrast between voiced and voiceless stops (and probably fricatives too, though the orthography is less clear on this point) is neutralized in favor of the voiceless member. The obvious way to handle such alternations is to posit underlying voiced obstruents in the forms involved and include a terminal devoicing rule in the grammar. The underlying representations of the forms just cited would then be /gab : gāben, tag : tage, sneid : snīden/, and the following rule would convert word-final voiced obstruents to voiceless ones:

3.11 [+ obstruent] → [− voice] / ___ #

(Obstruents are devoiced word-finally.)

Earliest attested Old High German, the predecessor language of Middle High German, had no such rule in its grammar; the Old High German forms of the words cited were *gab* : *gābum(es)*, *tag* : *taga*, *sneid* : *snīdan*. It is clear from the written records that Rule 3.11 was added to the grammar of Old High German between A.D. 900 and 1200 depending on the dialect. The terminal devoicing rule is present in the vast majority of the modern German dialects, including Standard German, though in some dialects it is limited to word-final fricatives. Some German dialects, however, do not have such a rule in their synchronic grammars, and in particular many Yiddish dialects do not have this rule. We may cite examples from Standard Yiddish, whose grammar lacks Rule 3.11 in any form: *hob* 'I have' : *hobm* 'we have', *lid* 'song' : *lider* 'songs', *tog* 'day' : *teg* 'days', *noz* 'nose' : *nezer* 'noses', *rov* 'rabbi'.

Two explanations of this are possible. One, which we reject, is that Yiddish never added to its grammar a rule that devoiced final obstruents. Evidence still in the language argues against this, for Standard Yiddish has numerous words which show that Rule 3.11 was operative in the language at some earlier stage: *avek* 'away', *hant* 'hand', *gelt* 'money'. All of these words had underlying *voiced* obstruents earlier, cf. the Middle High German cognates *hant* : *hende*, *wec* : *weges*, *gelt* : *geldes*. The final *voiceless* obstruents in the Yiddish forms could only have resulted from a stage in the development of Yiddish when Rule 3.11 was present in the grammar. In addition to purely internal evidence such as this, there is direct textual evidence for such a rule in a Yiddish rhyme of the thirteenth century (Röll 1966). This rhyme begins with the phrase *gūt tak* in Hebrew letters where the *k* in *tak* is spelled with the Hebrew letter for *k* (kuf) and not *g* (gimel). The Standard Yiddish expression for this is *a gutn tog*, cf. Standard German *Guten Tag* 'good day'. Furthermore, many Yiddish dialects still maintain final devoicing (Herzog

1965:220–223). This evidence, taken together, leads us to reject the proposal that Yiddish never had a terminal devoicing rule in its grammar.

One might, of course, try to account for the presence versus the absence of devoicing in Yiddish dialects by appeal to borrowing or to areal influence. There are insurmountable difficulties in such explanations, as Weinreich (1963) has demonstrated, and the various alternative explanations will not be investigated here.

It is more reasonable to assume that the earliest Yiddish dialects had in their grammars Rule 3.11 as an inheritance from Middle High German, but that most of the dialects since lost this rule from their grammars. The underlying voiced final obstruents in *tog*, *hob*, *lid*, *noz*, and so on have been carried along unchanged through the lexicons of successive generations of Yiddish speakers. As long as Rule 3.11 was present in the grammar to act upon these forms, they would have voiceless final obstruents in their phonetic realizations —*tok*, *hop*, *lit*, *nos*, and so on—rather like Standard German *Tag* [tʰa:k], *hab'* [ha:p], *Lied* [li:t]. With the loss of Rule 3.11 the underlying forms come through unaltered as regards their final obstruent; that is, voiced word-final obstruents at the underlying level are realized phonetically as voiced.

Instances of rule loss from a grammar are by no means uncommon. As we shall see in Chapter 4, rule loss is concomitant with the type of change we call restructuring, and restructuring is frequent enough in the history of languages. Let us investigate another case of simple rule loss where the evidence is reasonably clear.

All the early Germanic dialects except Gothic have an original alternation between voiceless and voiced fricatives that shows up with particular regularity in the principal parts of strong verbs. This phenomenon is known as *grammatical change*. It is a result of Verner's Law, which states that "Germanic voiceless spirants remained voiceless if the preceding syllable had the Indo-European accent, but became voiced in voiced surroundings if the preceding syllable had been unstressed in Indo-European times" (Prokosch 1939:61). Verner's Law may be stated as:

$$3.12 \quad \begin{bmatrix} + \text{obstruent} \\ + \text{continuant} \end{bmatrix} \rightarrow [+ \text{voice}] \,/\, \begin{bmatrix} + \text{voice} \\ - \text{accented} \end{bmatrix} \text{\_\_\_\_} [+ \text{voice}]$$

(Fricatives become voiced in voiced surroundings following an unaccented segment.) Examples of grammatical change are:

	Inf.	*Past Sg.*	*Past Pl.*	*Past Part.*	*Gloss*
OE:	snīþan	snāþ	snidon	sniden	'to cut'
ON:	kiósa	kaus	kørom	kørenn	'to choose'
OS:	tiohan	tōh	tugun	gitogan	'to pull'
OHG:	ziohan	zōh	zugum	gizogan	'to pull'

adjective rather than the past participle of *filhan*, and had been restructured in the lexicon to a separate adjective entry with /-g-/ no longer derived from the verb *filhan* with phonemic /-h-/. Similarly for *frawairþan* : *frawardjan*.

On balance, the evidence of the relic forms in Gothic points strongly to rule loss. Such relic forms are our best evidence in making a case for loss of a rule, just as the relic form *avek* 'away' in Yiddish supports the assumption that the terminal devoicing rule was lost in that language. In this case, the adverb *avek* had been dissociated from its historical source *veg* (with retained morphophonemic final *g*) and restructured in the lexicon to /avek/.

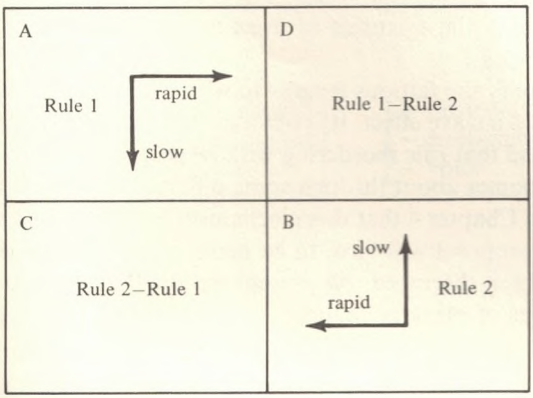
To be sure, the claim for restructuring rests on reasonable probability, not certain fact: no one knows for sure what took place in a Yiddish or Gothic speaker's lexicon. But one is usually safe in appealing to restructuring when the process of deriving one form from another cannot be synchronically motivated as a rule for the grammar in question, yet the two forms are known to be related etymologically. Gothic *filhan* and *fulgins* are known to be from the same source in pre-Gothic. Yet one cannot motivate a rule for the synchronic grammar of Gothic which would derive adjectives from verbs, among them *fulgins* from *filhan*. Presumably the speaker of pre-Gothic derived *fulgins* and *filhan* from a single lexical source, as English speakers do for *divine* and *divinity*; but the speaker of recorded Gothic learned two separate lexical entries, much as we learn *drink* and *drench* as separate lexical items, even though the two have the same etymological origin.

Rule Reordering. Another way dialects differ is in the ordering of certain of their rules. Thus, Dialect A contains in its grammar rules X and Y, which must apply in the order X first and Y second. Dialect B contains the same two rules but in the opposite order: Y first and X second. If the rules are crucially ordered in both dialects, a difference of output results. The number of attested examples of such reorderings increases as more and more languages are investigated from a generative point of view; and our present knowledge of relatively few reorderings indicates not so much their infrequency as the facts (1) that we have detailed histories of relatively few languages and (2) that researchers have not in general been on the lookout for reorderings.

Nevertheless, cases where two or more dialects differ in the order of application of the same or similar rules have been found for American English by Kenyon (1963:310–311), for modern Rumanian by Vasiliu (1966), for Swiss German and Finnish by Kiparsky (1965 and 1968b), and for modern German dialects by Becker (1967:87–92). Corresponding to the synchronic cases, a number of instances of rule reorderings in historical linguistics have recently been unearthed, and we shall analyze two of these here.

The phonology of Modern Standard German contains two rules of interest here: one is a terminal devoicing rule (given already as Rule 3.11); the other lengthens vowels followed by voiced obstruents. The latter rule expresses a generalization about German phonology with only a few exceptions, such as

following figure where Dialect C has Rule 2 followed by Rule 1 and Dialect D has the opposite order.



This hypothetical example is intended to suggest ways in which synchronic dialects may come to have rules identical but in different orders. (It is also possible that a rule is borrowed into different grammars at different positions in the grammars.) However, when we are dealing not with synchronic dialects but with different chronological stages of a language, there is no reasonable appeal we can make to some variant of the notion of wave. For concreteness let us take the two rules that were ordered oppositely in two distinct chronological stages of German. Middle High German had only Terminal Devoicing, the intermediate stage Early Modern German had Terminal Devoicing followed by Vowel Lengthening, and Modern Standard German has the two rules in reverse order. In order to develop an explanation in terms of different rates of diffusion of the two rules, similar to our hypothetical example, we would have to posit a hypothetical dialect whose grammar possessed Vowel Lengthening but not Terminal Devoicing. This hypothetical dialect would have to be assumed contemporaneous with Middle High German.

Now the stage is set for a wave explanation. Middle High German had Terminal Devoicing but not Vowel Lengthening; the hypothetical German dialect had Vowel Lengthening but not Terminal Devoicing. We assume different rates of diffusion from these two dialects. In one dialect or group of dialects the result is the order Terminal Devoicing followed by Vowel Lengthening (Early Modern German, some archaic modern dialects); in the other dialect area the result is Vowel Lengthening followed by Terminal Devoicing (Modern Standard German).

The catch in this is, of course, the hypothetical dialect which had only Vowel Lengthening but not Terminal Devoicing. There is not one single hint of evidence that such a dialect ever existed. There is no scribal evidence pointing to such a dialect. Even in those few German dialects or languages (like Yiddish) derived from German that today lack Terminal Devoicing, relic

forms point to the earlier existence of a rule devoicing some or all obstruents word-finally. (This was already noted under RULE LOSS.) And bear in mind that each time a case of rule reordering is presented, it will be necessary to assume pro forma the existence of some hypothetical dialect having one rule but not the other rule.

These exemplify the fatuous lengths to which one is led if rule reordering is to be ascribed to a wave effect. It is obvious that this is quite simply the wrong explanation, and that rule reordering with respect to two chronological stages of a language comes about through some different kind of mechanism. It will be suggested in Chapter 4 that this mechanism is simplification of a particular type, but this proposal will have to be deferred until language acquisition by the child has been discussed. At present we shall continue our enumeration of the categories of primary change.

SIMPLIFICATION. One of the most common ways in which dialects differ is in the generality of analogous rules in their grammars. Let us consider one rather simple example. As has been pointed out before, most German dialects have a rule that devoices final obstruents (Rule 3.11). In some dialects, however, the rule is less general: in Alsatian, for example, it affects only word-final fricatives (Becker 1967:112–113). This version of the terminal devoicing rule was stated already as Rule 3.16:

3.11 $[+\text{ obstruent}] \rightarrow [-\text{ voice}] / \_\_\_\ \#$ (All obstruents affected)

3.16 $\begin{bmatrix} +\text{ obstruent} \\ +\text{ continuant} \end{bmatrix} \rightarrow [-\text{ voice}] / \_\_\_\ \#$ (Only fricatives affected)

Rule 3.11 is simpler: it has a feature count of three while Rule 3.16 has a feature count of four. (# is arbitrarily assigned here a value of one.) Rule 3.11 is also the more general of the two since it applies to the natural class of all obstruents whether stops or fricatives, and Rule 3.16 applies only to the natural class of fricatives. As regards the terminal devoicing rule, then, the difference between Alsatian and those dialects with Rule 3.11 is that the grammar of Alsatian has a less general, more restricted version of the rule. The lesser generality of Rule 3.16 is reflected formally in its higher number of features.

It seems probable that it is precisely in this way that dialects often differ. In a detailed generative phonological study of three modern German dialects, Becker (1967) found that their grammars differed most often in the increased generality, lessened generality, or presence of a given rule in one grammar but not the other. (In his study only one case of rule reordering was discovered.) We may cite here one of his examples of a typical situation. A given phonological rule whose structural change need not concern us affects /t/ in

sense, but it is true of rule loss and rule reordering. The simplification in the latter cases amounts to a reduction of allomorphic variation in certain morphemes at the surface level. Before the terminal devoicing rule was lost in Yiddish, a morpheme such as *veg* 'path' would have had two allomorphs: /vek/ and /veg/. The loss of the terminal devoicing rule in effect collapses these two allomorphs into one /veg/; so too for all the forms that display this type of biallomorphy.

In Standard German, before the terminal devoicing and vowel lengthening rules were reversed in order, a noun such as *Rad* 'wheel' would have had the two allomorphs /rat/ and /ra:d/, which differ both in the length of the root vowel and in the voicing value of the final obstruent. Upon reordering, *Rad* would have the allomorphs /ra:t/ and /ra:d/, which are different only in the voicing value of the obstruent.

The Monachi example presented in Section 3.2 as an instance of rule addition can be interpreted as a case of simplification. Recall that the Bishop dialect had nasalized [w̃] corresponding to non-nasalized [w] in the North Fork dialect. Nasalized glides are somewhat unusual in the world's languages; Chomsky and Halle (1968:407), in their marking conventions for glides, state that glides are specified non-nasal. Thus, a grammar that violates this constraint is more complex than one that obeys it. In the Monachi example we seem to have a transition from a grammar that violates a universal constraint on nasality in glides to a simpler grammar that obeys this constraint. Bishop represents the older, more complex stage; North Fork, the newer, simpler stage of grammar.

It is not altogether accidental that types of primary change turn out to be instances of simplification in disguise. Why this should be so is the problem to which we shall devote our attention in the following chapter.

SUPPLEMENTARY READING

Becker, Donald A. 1967. *Generative Phonology and Dialect Study: An Investigation of Three Modern German Dialects.* Unpublished doctoral dissertation, University of Texas at Austin.

Bloch, Samuel J. 1963. Review of Hans Kurath and Raven I. McDavid, Jr., *The Pronunciation of English in the Atlantic States. Language* 39.303–316.

Chomsky, Paul. 1968. "Linguistic Universals and Linguistic Change," in *Universals in Linguistic Theory*, eds. Emmon Bach and Robert T. Harms. New York: Holt, Rinehart & Winston, Inc.

Saporta, Sol. 1965. "Ordered Rules, Dialect Differences, and Historical Processes." *Language* 41.218–224.

Weinreich, Uriel. 1954. "Is a Structural Dialectology Possible?" *Word* 10.388–400.

This example invites comparison with the case discussed in Section 3.3 of rule loss in Yiddish. There, a rule for devoicing terminal obstruents was lost, producing *veg* : *vege* and *tog* : *teg* from earlier surface forms *vek* : *vege* 'path, paths' and *tak* : *tage* 'day, days'. One of the crucial bits of evidence of rule loss was the presence in contemporary Yiddish of relic forms like *avek* 'away' from original *veg* 'path', indicating the previous existence of a rule of terminal devoicing.

Suppose now that the child discussed in regard to *t*-voicing had retained into adulthood his grammar of age five. Suppose further that other children of the same and following generations also retained a grammar of English that lacked the *t*-voicing rule. This situation is not completely far-fetched because such a grammar is simpler than one containing the *t*-voicing rule and because there are dialects of English (like British English) without the rule. We would then reach a point in several generations where a sizeable portion of the population would be saying [sɪt^{h}] : [sɪt^{h}ɪŋ], [raɨt^{h}] : [raɨt^{h}ɪŋ] (*write* : *writing*). From the viewpoint of historical linguistics we would know this to be a case of rule loss for the same kind of reason as in Yiddish: the existence of "relic" forms [wadɨr] *water*, [bɪdɨr] *bitter*, [lædɨr] *latter*. If we had sufficient knowledge of the history of English and other dialects of English, we would know that such forms originally had *t* in them, and the fact that they now show [d] would point back to a stage when the *t*-voicing rule was operative.

Note that rule loss might better be termed "rule nonacquisition" to emphasize the likely mechanism by which rules are lost from a grammar. However, the notion of rule loss has been in historical linguistics for a long time, and it is preferable to retain the traditional terminology for this kind of memory change.

Examples such as these, which can be multiplied by close observation of child speech, support the proposal that children simplify (optimize) the grammar that they construct. This does not mean, of course, that they must always simplify or that they can never acquire more difficult grammar rules. The maturation process in child language is precisely characterized by the acquisition of additional rules, the refinement of already acquired rules—in general the construction of a larger and more complex grammar. But in being presented with the data of his language, each child draws his own conclusions about what kind of grammar has produced the data. Each child in each new generation takes a fresh look at the situation, as it were, and the result is often simplification of a sort beyond the capabilities of adults, who have completed the construction of *their* grammars—at the least beyond the capabilities of the average, linguistically unsophisticated adult. The restriction on restructuring in adult grammars may not be quite so severe for adults who, for one reason or another, have a greater than average concern with language. Anyone who (like the present author) didn't get *who* and *whom* straight until the first year of college has apparently succeeded in reordering a pair of transformational rules. This is what the Klima (1965) analysis would suggest.

Thus H_2 is adequately confirmed by the data, and generative grammar provides a rationale. It is different with H_1—the strong hypothesis that phonological change occurs only in phonetically defined environments. Nothing in the theory of generative grammar would lend prior logical credence to this claim. In the view advanced here, the class of possible innovations in the grammar of a language is a proper subset of the class of phonological rules. Some phonological rules in natural languages require for their operation grammatical information carried over from the lexicon and the syntactic rules. In English, for example, the rules assigning word stress place stress differently in nouns and verbs, e.g. *cóntent* versus *contént*, *pérmit* versus *permít*. In many languages rules deleting and adding segments apply only to restricted classes such as verbs, nouns, or even subclasses such as strong verbs. Rule 3.13 (discussed in Section 3.3) in the grammars of certain of the Germanic dialects is stated in terms of the grammatical features *Stem-final*, *Past Plural*, and *Past Participle*.

Since this is so, it would be unlikely that every phonological change could be stated in terms of purely phonetic environments. And the empirical evidence bears out this prediction. Cases are not uncommon of changes that occur across the board except in certain morphological environments. In the development of Standard Yiddish from something similar to Middle High German, we find that final unaccented *e*, phonetically [ə], has been lost: *tage* > *teg* 'days', *erde* > *erd* 'earth', *gibe* > *gib* 'I give', *gaẓẓe* > *gas* 'street'. In some cases, however, final [ə] is not lost, principally when the *e* is an adjective inflectional ending: *di groyse shtot* 'the big city', *dos alte land* 'the old country', *a sheyne froy* 'a pretty woman'. A few other final unaccented *e*'s are retained, erratically, but these too are confined to specific morphological environments, e.g. *gésele* 'little street', where *-(e)le* is the diminutive suffix.

The retention of *e* in the adjective endings has nothing to do with a difference in phonetic environment. All schwas were in unstressed position, and there is no phonetic property characteristically associated with adjectives in Middle High German that might somehow account for the loss. We can even find near-minimal pairs containing final unaccented *e*'s that were dropped or retained: *gloyb* 'I believe' : *toybe* 'deaf (inflected adjective)' from Middle High German *gloube* : *toube; meyn* 'I think' : *sheyne* 'pretty (inflected adjective)' from Middle High German *meine* : *schœne*.

Nor is there an explanation in analogy. There is nothing to analogize to in these cases. The simplest conclusion is that the environment of this change is not purely phonetic:

$$5.6 \quad \begin{bmatrix} V \\ -\text{stress} \end{bmatrix} \rightarrow \left\{ \begin{array}{c} [-\text{next rule}] \,/\, + \,\_\!\_\,)_{\text{Adjective}} \\ \emptyset \qquad /\, \_\!\_\, \# \end{array} \right\}$$

(Unstressed vowels are deleted in word-final position unless that word is an inflected adjective. The rule can be stated as applying to *all* unstressed vowels because only *e* [ə] occurs finally under weak stress.)

This, then, is a case pure and simple of phonological change that cannot be stated in terms of purely phonetic features. It is, in other words, a counter-example to the strong form of the regularity hypothesis H_1. A weak sometimes used in attempting to account for morphologically conditioned phonological change like this is *functional* (Sapir 1949:262). The notion (in this case) is that *e*'s serving to mark adjective inflections fulfill a necessary function which requires their maintenance, whereas *e*'s in all the other cases can be dispensed with. This is not an explanation for the dilemma but merely a different term to designate it with, for unless "functional" is defined in some precise, noncircular way it cannot be offered as an explanation.

Another instance of phonological change in nonphonetic environments occurs in Mohawk (Postal 1968:245–254), where the sequence [kw] from proto-Mohawk-Oneida sometimes undergoes epenthesis, cf. the pair Mohawk [kewi'stos] : Oneida [kwi'stos] 'I am cold', parallel to a general process of epenthesis in consonant-resonant sequences that breaks up the clusters [sr, nr, sr, tr, kr, tn, sn, kn, tw, sw, kw, sy] by inserting *e*. Certain [kw] sequences, however, do not undergo epenthesis in Mohawk; one is of the same type as the Yiddish example. When the *k* and the *w* in [kw] are, respectively, the first person marker and the first element of the plural morpheme, no svarabhakti (epenthetic) *e* is inserted: e.g. Mohawk [ya'kwaks] : Oneida [ya'kwaks] 'we several exclusive eat it'. There is nothing irregular or sporadic about this; it happens throughout the language in noun and verb prefixes whenever the sequence [kw] means "first person + plural." Like the Yiddish example, it is regular in the sense of H_2 but not H_1. It applies across the board except that it is impeded in a particular morphological environment. (Notice that the existence of morphologically conditioned phonological rules does not force the conclusion that such rules were added in their synchronic form. It is an interesting but yet unproved claim that all such rules are originally innovated as "purely" phonological rules and later restructured to contain morphological information. In the Yiddish and Mohawk cases there is no reason to suppose that the rules discussed were innovated lacking the morphological conditioning.)

On balance it seems unlikely that such morphologically conditioned phonological changes are rare in the world's languages. They do not figure very prominently in formal accounts of historical linguistic development for a variety of reasons. One reason is that they are counter-examples to H_1. A second reason is a certain dullness which attaches to them. Once we have determined that *x* becomes *y* except in the morphological environment *z*, the story is over, and there is little to do but move on to more interesting things. Speculating *why* [kw] did not undergo epenthesis in a particular morphological environment or *why* final [ə] did not drop in Yiddish in adjective

inflectional endings is on a par with speculating why Indo-European *k^we* and *k^wo* became Indo-Iranian *ča* and *ka*. Usually we simply do not know, though no harm is done by considering possible causes.

One can always devise some ad hoc explanation to save the strong form of the regularity hypothesis when faced with nonphonetic sound changes. Instead of assuming the obvious—that some regular phonological changes take place in environments whose specification requires superficial grammatical structure—one might posit a boundary of some sort (a "plus-juncture") for just these cases. Since many formal boundaries in language do have observable phonetic correlates (word boundary is sometimes realized as pause), one could attribute to the plus-juncture certain purely phonetic characteristics. In this way it is always possible to reduce the original exception to one with a strictly phonetic environment. In the Yiddish example one could assume for Middle High German a plus-juncture (+) that precedes all and only adjective endings and then state the rule of schwa-deletion as: schwa disappears word-finally except after plus-juncture. From *toub*+*e* 'deaf (inflected adjective)' one would obtain Yiddish *toybe*; from *gloube* 'I believe', Yiddish *gloyb*.

It should be obvious that this is a trick, a gimmick. It is no solution to the problem; it merely provides a simple sign (+) to designate the troublesome cases with. The reason why this is an illegitimate device is that boundaries in natural languages are hardly ever (probably never) consistently realized in some particular phonetic way. In other words, so far as we know, it is a universal that boundaries, whether morpheme, word, or whatever, are optionally realized as null. All experience with currently spoken languages supports this proposition. To postulate for an historical language a kind of unique boundary *always* phonetically manifested in some defined way violates the cardinal constraint in historical linguistics: descriptions of earlier languages must never violate universals that hold for actually observed languages.

The major reason why morphologically conditioned phonological changes have received relatively little attention is that H_1, the strictly phonetic version of the regularity hypothesis, has been held by the majority of the linguists working in the historical field, certainly by those in the Neogrammarian tradition. If one accepts H_1 as a matter of principle, then the question becomes not whether morphologically conditioned phonological changes exist but what other factor or combination of factors accounts for the aberrancy. The following is a typical example (Bloomfield 1933:362–364). Intervocalic *s* from Indo-European is normally lost in Greek: **geúsō* > Greek *geúō* 'I give a taste'. However, in a large number of aorist verb forms we find, apparently, a retained intervocalic *s*: *ephílēsa* 'I loved', *emísthōsa* 'I let', *ētísa* 'I honored'. This is generally attributed to analogy because aorist *s* is preserved when not intervocalic: *égrapsa* 'I wrote', *épleksa* 'I wove'. In this case the explanation is plausible since there is something of a model for

the analogical reintroduction of *s* in positions where it would have disappeared by regular sound law. Nevertheless, *ephílēsa*, and so on, are counterexamples to H_1, and to save the hypothesis in its strong version we must look elsewhere for an explanation. In the Yiddish and Mohawk examples, analogy is out of the range of reason. Considerations of this kind rule out the strong form of the regularity hypothesis, H_1, but not the weaker form, H_2.

In other cases phonological change can be stated only in terms of a phonological environment that is not purely phonetic. Generative phonology is insistent for many reasons on the difference between abstract levels of phonological representation and phonetic representation. Roughly speaking, the latter is the level of representation after applying the last binary phonological rule (the n-ary rules that fill out the phonetic detail are irrelevant here). Anything higher is more abstract, "deeper" because further removed from the actual phonetic shape. The most abstract level of phonological representation is the string of formatives present as input to the first rule of the phonological component. The striking difference between deep and surface structure has been evident in many of the examples given here, e.g. the phonetic surface form [dəva·i̯n] has a deep structure representation (systematic phonemic, underlying) /divīn/ and intermediate representations such as [divīyn], [divēyn], and [divāyn].

In the light of this hierarchy of phonological representation, the strongest possible form of the regularity hypothesis would be that only surface phonetic structure is permissible to the statement of the environment of a phonological change. This in turn is equivalent to the claim that phonological change consists solely of rule addition at the end of the phonological rules. In this view, every innovation would have to be expressible by adding a rule at the lowest level of phonological representation—the surface level. This is the substance of H_1. In Chapter 3 we examined a number of cases in which this is not true. The only way to express Lachmann's Law in Latin is by assuming that a rule was added *not* at the end of the binary phonological rules but before the rule devoicing obstruents regressively (Rule 3.9). Lachmann's Law thus crucially requires a higher level of representation than the surface phonetic; it requires the representation /agtum/ rather than the surface form [aktum] to give the correct form *āctum* 'having been driven, led'. Without the higher level there would be no way of obtaining the long vowel in *āctum* from surface [aktum] alongside the short vowel in *factum* 'having been made' from surface [faktum].

Notice that it is not claimed here that rules may be added at only two points in the derivation of an utterance—the systematic phonemic and the surface phonetic representations. The claim is not that Lachmann's Law requires the systematic phonemic level of representation for its statement, but only that a rule could not have been added on at the end of the phonological component. We assume rather that the rule was inserted into the grammar of

Examples are rife: paradigmatic resistance to phonological change, the interference of folk etymology in regular change, the avoidance of homonymy. An instance of the latter type occurs in certain French dialects where intervocalic *r* has become *z* regularly except for certain words such as *frères* 'brothers' and *oreille* 'ear'. This exception has been attributed (Lerch 1925: 80–82) to a striving to avoid homonymy, to avoid falling together with *fraises* 'strawberries' and *oseille* 'sorrel'. This kind of active participation by the speaker in the processes affecting his language is taken for granted in the work of many Romance linguists, precisely because, one suspects, Romance dialectology has turned up so many exceptions to supposedly regular sound laws. The notions of "therapeutic change" and "lexical pathology" come to mind here, concepts which are exemplified most vividly in the work of the French-Swiss scholar Jules Gilliéron. (Cf. Gilliéron 1915, 1918, also Malkiel 1967.)

Anyone familiar with dialect studies over an extensive language area is not surprised by exceptions to phonological changes that are for the most part regular. Do such irregularities falsify the theory of phonological change proposed here? The answer is No. In this concluding section we shall look into some of the ways that these irregularities may be accounted for in a theory of linguistic change compatible with generative grammar.

Every theory of grammar must be equipped with some way of marking exceptions to general rules. In some languages there is a division between native and nonnative morphemes; typically the latter do not undergo a rule or set of rules affecting the native portion of the lexicon. In Finnish (Harms 1968:120) proper nouns with a single noninitial stop are not subject to a certain rule, which we shall designate as Rule *x*. We account for this in the grammar in the following way. A redundancy rule uses the feature [+ Proper] to state what is special or aberrant about proper noun lexical morphemes. In this instance we would have the redundancy rule:

$$5.7 \quad \begin{bmatrix} +\text{Noun} \\ +\text{Proper} \\ +\text{obstruent} \\ -\text{continuant} \end{bmatrix} \rightarrow [-\text{Rule } x] \,/\, [-\text{obstruent}] \_\_\_ \text{V}$$

This states that any noninitial stop in a lexical item fitting the structural analysis of Rule 5.7 is marked additionally as "minus Rule *x*," which by convention prevents such items from undergoing Rule *x*. Similarly, morphemes foreign in a language and therefore exceptions to certain rules will be marked [+ Foreign] in the lexicon, and we will have a redundancy rule of the form:

$$[+\text{Foreign}] \rightarrow \begin{bmatrix} -\text{Rule } x \\ -\text{Rule } y \\ \cdots \end{bmatrix}$$

H_1, the strictly phonetic version of the regularity hypothesis, and H_2, the weaker claim about phonological change regularity, the main purpose was to demonstrate that a linguist can accept one hypothesis (H_2) while rejecting the other (H_1). This in fact was done here. We have accepted H_2 and even pointed out specific reasons in generative grammar why H_2 should be true. But various kinds of data were produced to falsify H_1, and there is no reason to accept the constraint on change that H_1 embodies.

This does not, however, open the field to wild orgies of unbridled speculation. The more general a rule is, the more highly valued the grammar containing that rule is in the evaluation of grammars. A rule that specifies a change in a purely phonetic environment is higher valued than a rule carrying out the same change in the same environment but now modified by a specification [− Class *x*], where "Class *x*" is a nonphonetic specification such as [+ Noun], [+ Adjective], or [+ Plural]. If all else is equal, the first formulation of the rule is to be preferred over the second.

In short, we try to render the simplest account of the facts. If a change has a purely phonetic environment, the simplest account involves writing a rule with a purely phonetic environment. If the change cannot be stated in purely phonetic terms, we still render the simplest account we can. This may require us to write a rule whose structural analysis contains some morphological features (as in the loss of Yiddish final schwa); or to order the rule in the grammar so that it operates on an abstract phonological representation (Lachmann's Law); or to write a minor rule applying to only a small part of the lexicon; or possibly to write a major rule to which several lexical items are marked as exceptional.

This is all merely a complicated way of saying that historical linguists do what they are supposed to do: describe change. A wide array of evidence now shows that phonological change takes place in environments both phonetic and nonphonetic. To describe change we cannot observe a dictum requiring us to make the environment of every phonological change strictly phonetic. This is just the way things are.

SUPPLEMENTARY READING

Bloomfield, Leonard. 1933. *Language*. New York: Holt, Rinehart & Winston, Inc. Chaps. 20–23.

Hermann, Eduard. 1931. *Lautgesetz und Analogie*. Berlin: Weidmannsche Buchhandlung.

Hockett, Charles F. 1958. *A Course in Modern Linguistics*. New York: The Macmillan Company. Chaps. 42–54.

Kiparsky, Paul. 1965. *Phonological Change*. Unpublished doctoral dissertation, Massachusetts Institute of Technology.

Postal, Paul M. 1968. *Aspects of Phonological Theory*. New York: Harper & Row, Publishers. Chaps. 10–15.

Wechssler, Eduard. 1900. *Giebt es Lautgesetze*? Halle: Max Niemeyer.

underlying forms in voiceless fricatives and to include Rules 7.4, 7.5, and 7.6 in the grammar of Old High German. In this account we have reconstructed three rules that were added at some earlier time. (Synchronically, certain of these rules must be collapsed.) The three Rules 7.4, 7.5, and 7.6 effect phonological changes well known in the history of Old High German, though they are usually arrived at by comparing Old High German with other languages in the Germanic and Indo-European families. Here, the three phonological changes have been deduced from consideration of evidence found only within Old High German. We were led to them through simplicity of analysis.

Thus, the addition of a rule is potentially reconstructible. Our accuracy of reconstruction hinges upon the ultimate outcome of the rule in successive generations of grammars. If the original rule remains intact or nearly so in later grammars, we can come quite close to reconstructing the original innovation. If, however, the innovation has led to partial restructuring and thus is retained (if at all) only in altered form, we may not be able to recover the original innovation in anything like its correct form. The instance of Grimm's Law $p\ t\ k > f\ þ\ x$ is just such a case. After this occurred, the simplest grammar would have as the underlying form of 'father' /fəþḗr/ (earliest Germanic), not /pətḗr/ (Indo-European). Only in the past tense forms of weak verbs, where *t* could alternate with *þ* according to phonetic environment, is there no restructuring of *t* to *þ*; and only from the handful of such residual forms can we recover even part of the original change.

Restructuring after rule addition complicates reconstruction and in some cases effectively sets the limit beyond which we cannot recover lost structure, as is clear in the case of a context-free rule such as Indo-European $*b\ d\ g >$ Germanic $p\ t\ k$: no alternations are produced, the optimal grammar has different underlying forms and lacks the rule, and we are deprived of any chance at reconstruction. Likewise, when a context-sensitive rule does not happen to produce any phonological alternations, restructuring takes place and puts an end to our reconstructing. The change of initial $p\ t\ k > f\ þ\ x$ in Germanic happens not to have produced any morphophonemic alternations. Hence such occurrences of $p\ t\ k$ undergo restructuring and are beyond our reach. The sound *t*, just happening to be affected, as the marker of the weak preterite could split into *t* and *þ* according to environment, permitting us to recover this little piece of the original change. Just these *t*'s were not restructured.

RULE LOSS. The loss of a rule is potentially reconstructible. The process was demonstrated in Chapter 3 (Section 3.3 under RULE LOSS) for two cases: loss of terminal devoicing in Yiddish and loss of Verner's Law in Gothic. In both languages internal evidence consists of forms originally affected by the rule, subsequently restructured out of the domain of the rule, and retained in their phonemically altered forms when the rule becomes lost

depend upon placement of the Indo-European accent. We find furthermore from Indo-European that causatives are frequently associated with suffix accent whereas most strong verbs had root accent; hence we can see why Gothic has relic causatives with voiced fricatives corresponding to bases in voiceless fricatives. Though we cannot reconstruct all this from Gothic alone, on the basis of the relic forms still in the language we can make a plausible case for loss of the rule corresponding to Verner's Law.

So the reconstructibility of rule loss crucially depends upon relic forms. In contrast to the recovery of rule addition, where restructuring obscures the original situation, the recovery of rule loss is possible only if restructuring has taken place in at least one form. If in Gothic the relic forms had never been morphologically isolated from their historical sources and had not undergone restructuring, they would not have been "relic forms"; they would not be in any way out of the ordinary, and the rule would have been lost without a trace.

Loss of a rule R can thus be reconstructed just in case a lexical form X, yielding two variants y and z of which one undergoes rule R, has been replaced in the lexicon of a later grammar by two lexical forms Y ($< y$) and Z ($< z$) *before* loss of rule R. The lexicon of pre-Gothic contained, we assume, the form *frawairþ-* (X). From this were derived the two variants *frawairþan* 'to perish' (y) and the original causative *frawarþján* 'to cause to perish' (z), whence *frawardjan* by Verner's Law. Subsequently the causative *frawardjan* was semantically disconnected from *frawairþan*: the former was no longer synchronically derived from the latter. The causative *frawardjan* remained in the language but required its own lexical entry; thus the lexicon of this later grammar of Gothic contained separate forms *frawairþ-* 'to perish' (Y) and *fraward-* 'to cause to perish', i.e.'to ruin, destroy' (Z). Upon loss of the rule converting $þ > d$ (Verner's Law), *frawardjan* became a "relic form."

Relic forms are typically created when a morphological process has ceased to be "productive," to use the traditional term. In transformational grammar this means the loss of a low-level syntactic rule. Such a rule was causative formation, which though present in Gothic was in the process of breaking down: the later Germanic languages did not have causative formation as a synchronic transformation. The precarious status of this rule doubtless contributed to the lexical split of pre-Gothic *frawairþ-* into attested Gothic *frawairþ-* and *fraward-*.

All else being equal, loss of a phonological rule leaves no traces. Such loss is usually reconstructible just in those cases where, fortuitously, an independent change (e.g. loss of a low-level transformation) has taken place affecting forms that are input to the phonological rule.

In the general case we may count ourselves fortunate to have so many relic forms around in Gothic. In Standard Yiddish only one form, *avek* 'away' from *veg* 'path' historically, permits us to infer the loss of final

devoicing from Yiddish evidence alone. Comparative material clinches the case, however, since Yiddish has many words ending in voiceless obstruents that correspond to underlying voiced obstruents in German: Yiddish *hant*: *hent* versus German *Hand*: *Hände* 'hand, hands'; Yiddish *honik* versus German *Honig* 'honey'. One of the classic papers on reconstruction of rule loss is Sapir (1926), in which a handful of aberrant forms in Chinookan lead to the reconstruction of a previously unnoticed sound law.

RULE REORDERING. Kiparsky (1968b) calls attention to two important kinds of rule reordering. The first of these types, which we shall refer to neutrally as *Type A*, is illustrated by the example of German rule reordering discussed under RULE REORDERING in Chapter 3 (Section 3.3; see also Chapter 4, Section 4.4). In this kind of reordering the (originally) second rule occupies a position where it applies to more forms. Schematically, we may represent this as follows:

Type A	Rule X	xxx	...
	Rule Y	...	xxx
		⇓	
	Rule Y	xxx	xxx
	Rule X	xxx	...

(xxx indicates that the rule applies; ... indicates that it does not apply.)

The instance of German rule reordering discussed previously in this book is of this type (cf. Section 4.4). Originally in German, the two rules Final Devoicing and Vowel Lengthening applied in the order:

Underlying Forms:	veg	vegə
Final Devoicing:	vek	....
Vowel Lengthening:	...	ve:gə
Surface Forms:	vek	ve:gə

Upon reordering in the later grammar of standard German we have:

Underlying Forms:	veg	vegə
Vowel Lengthening:	ve:g	ve:gə
Final Devoicing:	ve:k	....
Surface Forms:	ve:k	ve:gə

Type A reordering, like rule loss, is potentially recoverable by internal reconstruction. It too can leave behind relic forms which could have arisen only as a result of the original ordering. In standard German we thus have the adverb *weg* [vek] 'away' historically from the base *Weg* 'path'; [vek] from underlying /veg/ is impossible in the synchronic ordering of the two

8

CAUSALITY OF CHANGE

A certain category of questions has been avoided so far in this book: *why* linguistic change occurs in the first place, *why* one change takes place instead of another. Nothing, or very little, has been said about the causes of change. Our concern has been to describe change, to determine what it is rather than why it takes place.

Though we have made no attempt at explanation, we have at times related certain facts of change to certain others more general in nature. This comment applies especially to simplification. It was observed in Chapter 4 and elsewhere that some changes, notably rule loss and rule reordering, are variants of simplification and that grammar simplification frequently accompanies diachronic development. This lends psychological plausibility to loss and reordering as bona fide events of linguistic history, and we can predict how grammars might change on simplification. But we do not thereby

explain *why* loss and reordering occur. In losing a rule of terminal devoicing Yiddish has simplified its grammar, but why did Yiddish, along with a few other German dialects, "choose" to simplify in this way? Why do languages innovate rules?

There is a long history of attempts at arriving at the cause or set of causes of phonological change, at a solution of the "actuation riddle" of phonological change (Weinreich *et al* 1968). We know nothing more about this than did Hermann Paul. To use one of the better-known putative causes of phonological change as an illustration, it is all very well to attribute a number of changes to "ease of articulation," e.g. *octo* > *otto,* but why do so many languages so successfully and so persistently resist ease of articulation? Why have not *all* languages assimilated to the utmost, parallel to *-kt-* > *-tt-*?

In view of the failure of phonological changes to occur under readily formulated conditions and in view of the notoriously weak principles hitherto invoked to explain the inception of change, many linguists, probably an easy majority, have long since given up inquiring into the why of phonological change. As Leonard Bloomfield bluntly put it: "The causes of sound change are unknown" (1933:385). No one runs any risk in being an utter cynic about the causes of phonological change.

One extreme position, then, holds that the cause of phonological change is not a part of linguistics proper:

> There is no more reason for languages to change than there is for automobiles to add fins one year and remove them the next, for jackets to have three buttons one year and two the next, etc. That is, it seems evident within the framework of sound change as grammar change that the "causes" of sound change without language contact lie in the general tendency of human cultural products to undergo "nonfunctional" stylistic change (Postal 1968:283).

Earlier linguists have held this view or something quite similar to it. Hugo Schuchardt, one of the Neogrammarians' most persistent critics, took a position strikingly similar to Postal's:

> While I am not quite prepared to compare sound laws to the laws of fashion, sound laws do seem to me to be matters of fashion for the most part. They derive from conscious or semi-conscious imitation (Spitzer 1922:55).

Against this position stand a large number of phonological changes in which a phonetic basis such as assimilation is clearly discernible. Simple cases of assimilation are commonplace in the development of languages: *kt* > *tt, ki* > *č, s* > *z* between voiced sounds, and so on. An obvious case can be made for assimilation as the underlying cause of Germanic umlaut:

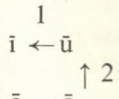
A second example of a drag chain comes from the Yiddish dialects of Northern Poland. Proto-Eastern-Yiddish is reconstructed by Herzog (1965: 163–164) with the short and long vowel systems:

i	u	ī	ū
e	o	ē	ō
	a		

Of the subsequent changes undergone by these vowels in the dialects of Southern Yiddish, three are of interest here. In chronological order they are:

(1) Fronting of $\breve{u} > \breve{\ddot{u}}$
(2) Unrounding of $\breve{\ddot{u}} > \breve{i}$
(3) Raising of $\bar{o} > \bar{u}$

The fronting of $\breve{u} > \breve{\ddot{u}}$ is clearly an innovation in Southern Yiddish, though a very thorough-going one. It cannot be ascribed to any areal influence. The parallel fronting development in Slavic never extended beyond the Ukraine (Herzog 1965:165), and no coterritorial or bordering language such as Lithuanian shows parallel changes. On these grounds Herzog regards the change $\breve{u} > \breve{\ddot{u}}$ as a "first cause" explaining subsequent developments. Thus the raising of $\bar{o} > \bar{u}$ stands in a drag chain relation to the fronting of $\bar{u} > \bar{\ddot{u}}$:



These changes can be explained in terms of rule simplification as follows. First, we assume that Rule 8.3 was added as an innovation in Southern Yiddish:

$$8.3 \quad \begin{bmatrix} V \\ +\text{long} \\ +\text{round} \\ +\text{high} \end{bmatrix} \rightarrow [-\text{back}]$$

(Rule 8.3 fronts $\bar{u} > \bar{\ddot{u}}$.)

Rule 8.3 is then simplified by replacing [+ high] in the structural analysis by [α high] and replacing [− back] in the structural change by [− α back]. The resultant rule now affects both back rounded vowels, creating the drag chain $\bar{u} > \bar{\ddot{u}}$ and $\bar{o} > \bar{u}$:

$$8.3' \quad \begin{bmatrix} V \\ +\text{ long} \\ +\text{ round} \\ \alpha\text{ high} \end{bmatrix} \rightarrow \begin{bmatrix} -\ \alpha\text{ back} \\ +\quad \text{high} \end{bmatrix}$$

Again, the feature [+ high] in the structural change of Rule 8.3′ is not an arbitrary insertion. It was present in the structural change of the original innovation Rule 8.3, and is carried over into the structural change of the simplification Rule 8.3′.

Rule 8.3, which we take as the original innovation in Southern Yiddish, also serves as a basis for the fronting of short $u > \ddot{u}$. More commonly rules become simplified by loss of a feature in the structural analysis. We assume that some dialects of Southern Yiddish simplified Rule 8.3 this way by suppressing the feature [+ long] in the structural analysis and giving a rule in which both long $\bar{u} > \bar{\ddot{u}}$ and short $u > \ddot{u}$:

$$8.3'' \quad \begin{bmatrix} V \\ +\text{ round} \\ +\text{ high} \end{bmatrix} \rightarrow [-\text{ back}]$$

Both rules 8.3′ and 8.3″ spread throughout the Southern Yiddish region so that eventually all dialects of Southern Yiddish had rules changing $\breve{u} > \breve{\ddot{u}}$ and $\bar{o} > \bar{u}$. This assumption of a wave-like spread is supported by the fact that Western Transcarpathian Yiddish, which has many features in common with Southern Yiddish proper, has Rule 8.3″ but not Rule 8.3′ (Herzog 1965:170).

The segments $\bar{\ddot{u}}$ and $\ddot{u}$ from Rule 8.3″ subsequently are unrounded in Southern Yiddish and merge with inherited $\bar{\imath}$ and i. At this point there is restructuring of the underlying segments; /ū/ and /u/ are replaced in the lexicon by /ī/ and /i/. Consequently, Rule 8.3″ and the rule unrounding $\breve{\ddot{u}} > \breve{\imath}$ are lost from the grammar, and the secondary plural formations characteristic of Southern Yiddish emerge: e.g. *kū* : *kī* 'cow, cows' becomes *kī* 'cow' with the variant plurals *kī*/*kīəs*/*kīən* (Herzog 1965:167).

The analysis of these Old High German and Yiddish examples suggests a single mechanism underlying causally related shifts: alpha-variable simplification of a previous innovation. This may be too hasty a conclusion based on insufficient evidence, or it may be just wrong. Let us consider an alternative analysis of the Old High German example which, though a simplification, is not the same form of simplification presented earlier.

Assume as before that Rule 8.2 ($d > t$) was an innovation in the grammar subsequent to the rule shifting *p t k*. Assume further that a rule changing $þ > ð$ was then added to the grammar as an independent innovation:

8.3 DRIFT

The term *drift* has been used in a variety of ways in linguistics. In the context of historical linguistics it usually means a tendency inherent in a related group of languages to develop in particular ways and to continue developing in these ways over several generations even when the languages are no longer in contact (Hockett 1948, Klima 1965:429, Sapir 1921: Chap. 7).

Many cases of drift are manifestations of simplification occurring independently in languages of the same family. An instance is the loss of terminal devoicing in Yiddish. One cannot well speak of a definite drift in German dialects here since the majority of them have kept a devoicing rule. Yet loss of this rule has occurred in German dialects other than Yiddish, in particular in some dialects of German in northern Switzerland (Zürich German has no rule of terminal devoicing). There is no question of borrowing here since the Yiddish of Eastern Europe was geographically and culturally isolated from these other German dialects during the period of its formation. Dialects that originally had a rule of final devoicing have independently undergone simplification of the same kind.

Seen in this light nothing about drift is particularly mystical. Simplification is a fact of language development, and its roots lie in the child's acquisition of language. It is a universal option. It is not surprising that some daughter languages should undergo identical but independent simplifications of a rule inherited in common from the parent language. They might lose the rule or the same feature in the structural analysis of the rule, but in either case the same process, simplification, is at work.

SUPPLEMENTARY READING

King, Robert D. 1967. "Functional Load and Sound Change." *Language* 43.831–853.

Martinet, André. 1955. *Économie des changements phonétiques.* Berne: A. Francke.

Moulton, William G. 1961. "Lautwandel durch innere Kausalität: die ostschweizerische Vokalspaltung." *Zeitschrift für Mundartforschung* 28.227–251.