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MONOPHTHONG AND DIPHTHONG RELATIONS:
INTERNAL EVIDENCE

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In current phonological theory, motivation for sound change is often cast in terms of 1) the phonetic plausibility of the change in question, 2) the presumed phonological universals involved, 3) presumed universal restrictions on rule ordering or 4) types of possible rules, rather than in terms of the internal economy of the phonological system which is undergoing modification. The status of the system as a whole and the interrelation of its parts has been somewhat neglected even though the relevance of teleological considerations has been emphasized as early as 1928 in Roman Jakobson's famous short article, 'The concept of the sound law and the teleological criterion.'

Jakobson is a prominent and influential member of the Prague school of European structuralists. Michael Lane in his anthology, Introduction to Structuralism (1970, p. 17ff) has summarized the attitude of the European structuralists toward explanation. Lane says that structural analysis is centrally concerned with synchronic structures, seen not as determined by any historical process but by the network of existing structural relations, expressed by a set of rules. Structuralism is effectively 'anti-causal' in its pure form, substituting laws of transformation for the notions of cause and effect. In this approach, language change is represented by rule change. According to Lane, objections have been made to this analytical method since, conventionally, scientific explanation as opposed to description has always dealt with causes and, critics say, the elimination of cause and effect prevents the possibility of satisfactory, adequate explanation.

In linguistic terms, changes in rules reflect changes in the distribution of distinctive units but do not tell us by themselves or by their ordering (if it can be determined) why rules should enter the grammar, become more or less general, or disappear. If rules can enter and leave the grammar without motivation, the effect is one of random and destructive change without system as Saussure thought. Jakobson has proposed that phonological components form true systems which maintain an equilibrium among the members such that the system is question is able to exhibit a stable set of contrasts. If this equilibrium is disrupted, a series of sound changes tends to occur until a state of renewed equilibrium is reestablished. (Jakobson, 1972, p. 136). The idea of equilibrium suggests that the stable set of contrasts and the means by which the contrasts are maintained are separate and distinct ideas which should be separately described and have an explicit set of correspondence statements to link them. This means one must determine how many contrasts exist and what their phonetic correlates are, instead of combining the two kinds of description into one system.

In line with the foregoing comments, this paper will examine some aspects of a sound change in the Low German dialect of Soest, Westphalia, in order to test the hypothesis that local equilibrium disruption and subsequent readjustment can offer more insight into certain kinds of sound change and into the relationships of monophthong and diphthong sets than universalist or rule ordering arguments.

The sound change in question is the change called *Hiatschärfung* in Low German. The change occurred in a number of South Westphalian dialects and has been given a good deal of attention by Low German dialectologists. The term refers to the appearance of a short vowel plus a fortis velar voiced fricative (in Soest) in positions where both synchronic and comparative considerations would lead the investigator to expect a long vowel alone, that is, in positions of hiatus before a vowel. In the Soest dialect, the complex [short vowel + γ] is otherwise the reflex of Middle Low German [short vowel + -gg-]: MLG *segge*, Soest [sɛɣə] 'ich sage', OLG *roggo*, Soest [rɔɣə] 'roggen' while the complex [long vowel + γ] is the reflex of either an inherited long vowel or a short vowel lengthened in open syllables plus MLG -g-: MLG *hōge*, Soest [hɔɣə] 'hoch', Soest [ʔāɣə] 'tage'. According to Holthausen, *Hiatschärfung* appears only in open syllables before a vowel synchronically, i.e., medially but not finally in a word. (Holthausen, 1886, p. 33). Only inherited long vowels or diphthongs participate in this sound change; vowels lengthened in open syllables which occur in hiatus from a lost medial -d- do not show *Hiatschärfung*. (See Table I).

The *Verschärfung* which appears in Faroese and which has been the focus of recent discussion in relation to Stephen Anderson's hypothesis of 'local ordering' of phonological rules is very similar to *Hiatschärfung*. In Faroese the *Verschärfung* also develops only in inherited long vowels in hiatus while lengthened or inherited long vowels in hiatus before a lost consonant do not show *Verschärfung*. In Faroese, additionally, the *Verschärfung* appears in final position: Faroese: [brɣva] 'to dwell' [knuʃa] 'knee', [kɪɣv] 'cow' but [vujja] 'dedicate' (ON *vígja*) [sɔʃin] 'cooked' (ON *sjóða*).

The traditional explanation for the development of *Verschärfung* which is followed by Anderson (1971) and Roe (1965), among others, is that a glide developed between the vowels in hiatus. The glide then doubled and became a true fortis consonant or consonant cluster preceded by a short vowel. This explanation is based on the phonological relations of contiguous segments but the lack of *Verschärfung* in the positions of hiatus before a lost consonant remains unexplained. The usual assumption is that the *Verschärfung* rule entered the grammar, affected the relevant forms, and was lost before the medial and final consonants were lost. However, no motivation for the addition or the loss of such a rule appears to be offered.

I have argued at length elsewhere (Grundt, 1974, 1975, 1977) that these two changes of *Verschärfung* and consonant loss could have been simultaneous and interdependent changes, and that the motivation for *Verschärfung* (or *Hiatschärfung*) was to maintain a structure contrast

TABLE I
Soest, Westphalia
Low German
Vowel Correspondences

Short vowels:

<u>Middle Low German</u>	Soest
i	I
ü, u	Y
u	U
ë, e (< a + i)	ε
o	o
a	a

Short vowels -- lengthened:

<u>Middle Low German</u>	Soest		
	<u>Open Syll.</u>	<u>Before v, γ</u>	<u>Hiatus (lost -d-)</u>
tl. e ² : (< i, a + i)	iə	i:ə	i:, UI
tl. ü ² : (< u)	yə	y:ə	y:, UI
tl. o ² : (< u)	uə	u:ə	(no examples)
tl. e ¹ : (< ë)	ea	ea	e:a
tl. ü ¹ : (< ü)	üa	üa	ü:a
tl. o ¹ : (< o)	oa	oa	o:a
tl. a: (< a)	a:	a:	a:a

Inherited long vowels and diphthongs:

<u>West Germanic</u>	<u>Middle Low German</u>	<u>Regular Reflex</u>	<u>Hiatus Reflex (Hiatschärfung)</u>
i:	i:	UI	Iγ [friγn] 'freien'
u: + i	ü:	UI	Yγ [dryγə] 'drohe'
u:	u:	IU	Uγ [ryγn] 'reuen'
e ² :	e ⁴ : } close	aε	--
ai + i	e ³ : } mid	aε	--
ai	e ² : } open	oε	[fεγəlic] 'veränd-
a: + i	e ¹ : } mid	ε	[bεγn] 'bähen' lich'
o:	o ¹ : } close	aɔ	--
o: + i	ü ¹ : } mid	aε	[mœγə] 'muhe'
au	o ² : } open	εɔ	--
au + i	ö ² : } mid	oε	--
a:	a:	ɔ:	--
	ei	aε	εγ [εγə] 'eier'
	au (ou)	aɔ	ɔγ [hœγn] 'hauen'
	eu (oi)	oε	œγ [hœγn] 'heuen'

between one-syllable and two-syllable units by structure exchange: CVCV vs. CVV-V and CVC# vs. CVV#. Assuming this analysis to have been the case, the reason for Anderson's ordering paradox becomes clear: it is a synchronic reflex of a diachronic paradigmatic change which occurred simultaneously and was dependent upon a syntagmatic change. That is, a sequential ordering of rules that represent simultaneous and interdependent changes will result in an ordering paradox such as Anderson's:

1. Dissimilation (Verschärfung) must precede spirant deletion.
2. Glide epenthesis must precede dissimilation.
3. Spirant deletion must precede glide epenthesis.

(Anderson, 1969, p. 63).

If synchronic ordering paradoxes can be explained by the wish to describe sequentially sound changes which have occurred simultaneously, it may be possible to examine other aspects of the Soest vowel system in order to determine if any other simultaneous changes may have occurred that would give rise to ordering paradoxes if their interrelations were recognized.

A number of sound changes occurred in the vowel systems of the Low German dialects - and, therefore, of Soest - during the Middle Ages: reduction of final vowels, open syllable lengthening, loss of medial -d-, Hiatschärfung, diphthongization of old long vowels. Can these changes be related chronologically to each other? The historical documents are not entirely unambiguous: open syllable lengthening and final vowel reduction are assumed to have occurred very early with the first attested evidence in the 12th century. According to Möller, the first evidence for the loss of medial -d- in Low German is in a 13th century document with traces appearing in 15th century documents and numerous examples from the 16th century. The 16th century satirist, Daniel van Soest, shows both the loss of -d- and the existence of Hiatschärfung in his work. (Möller, 1960, pp. 24, 29, 30). Lasch quotes many proper names from the 14th century onwards which show the loss of medial -d- and she remarks that the loss was early but after open syllable lengthening of short vowels. (Lasch, 1914, p. 169ff). Hiatschärfung itself is attested from the 14th century. In Soest the diphthongization of the open mid vowels was very early but the diphthongization of the high and close mid vowels was late with evidence appearing after 1685. (Möller, 1960, p. 27, fn. 10). The lengthening of short vowels in open syllables does not seem to have affected all the short vowels at the same time. In Middle English the non-high vowels /a, e, o/ were lengthened first and the high vowels /i, u/ were lengthened later and in a more restricted area, according to Wyld. (Wyld, 1914, pp. 112-113). Wiesinger remarks that open syllable lengthening in dialects of Central German and Lower Alemannic and Southern German, Bavarian and Swabian dialects was only partly carried out: in some dialects only a was lengthened, in others a, e, o and least frequently i, u. The diphthongization patterns are extremely complex in the German dialects but the general trend seems to be that non-high vowels were much more susceptible to open syllable lengthening. (Wiesinger, 1970, p. 23).

If, as V. M. Schirmunski claims, the lengthening of short vowels in open syllables was responsible for the elaborate diphthongization patterns in the German dialects, then it can only have been because the new lengthened vowels were a threat to the distinctiveness of the old long vowels. It would seem plausible to link the diphthongization of specific long vowels to specific lengthened vowels with the exception of the low vowel a which, Wiesinger claims, is isolated in the German vowel systems. (Schirmunski, 1962, p. 179ff) (Wiesinger, 1970, p. 31).

We have noted that the diphthongization of the open mid row of inherited long vowels in Soest occurred early. However, this diphthongized open mid row of vowels had its source in the close mid vowels of early Middle Low German. This is shown by the modern Soest reflexes of loan vowels where it is clear that the MLG open mid and close mid vowels have exchanged vowel heights. Holthausen gives the following correspondences: (Holthausen, 1886, p. 57).

<u>Loan vowel</u>	<u>Soest vowel</u>	<u>Examples</u>
e:	œ	[pœta] 'Peter', [fœva] 'fieber' [ɛksprœ] 'expres', [kafœ] 'kaffee'
i:	ʊ	[masxvɪnə] 'maschine', [mɪtə] 'miete'
o:	ɔ	[mœdɔ] 'mode', [rœzɔ] 'rose' [klœsta] 'kloster'
ö:	œ	[rœzəkɪn] 'röschen', [klœsta] 'klöster'
u:	ɪ	[jɪudə] 'jude', [prɪdl] 'pudel' [xɪrus] 'gruss' (*[xraɪt] expected)
ü:	ʊ	[xɪrɪsn] 'grüssen' (*[xraɛtn] expected)

As Table I shows, the vowels which are now used to correspond to the modern close mid vowels of loan words are the Soest reflexes of MLG open mid vowels. This suggests that the vowel height exchange of the inherited long mid vowels was a double paradigmatic response to the open-syllable lengthening of the short mid vowels /e, ʊ, o/ as I have argued at length elsewhere (Grundt, 1974, 1975). As a direct response to a threat to distinctiveness, the vowel height exchange by reciprocal diphthongization would logically have occurred simultaneously with open syllable lengthening. Since the documents show early diphthongization in the open mid row and early open syllable lengthening, they do not contradict this interpretation.

Here we have a situation similar to the Faroese Verschärfung/consonant loss problem which gave rise to Anderson's ordering paradox; we would predict that an ordering paradox ought to arise here as well. The difference is that Anderson has interpreted the Verschärfung in Faroese as primarily a syntagmatically conditioned change whereas I have interpreted a similar situation in Soest as a paradigmatic change. The relevant position in the Soest situation is the open syllable but the vowel height exchange and diphthongizations have occurred in all positions, not just in open syllables so that the proposed relationship is obscured. However, in certain dialects of Frisian, it is the case that in dialects with open syl-

lable lengthening long vowels tend to diphthongize in open syllables but remain monophthongs in closed syllables, thus supporting the proposed direct relationship between diphthongization of old long vowels and open syllable lengthening of short vowels. (Siebs, 1889, p. 199).

From the Hiatschärfung reflexes in Table I, it is clear that these reflexes developed from monophthongs before the diphthongization of the high and close mid long vowels. This means that Hiatschärfung in Soest occurred before 1685 since it was after that date that we find the high and close mid vowel diphthongs attested. For example, the Hiatschärfung reflex of MLG /i:/ is [ɪʏ] which must have come from [i:], not Soest [ui]. Likewise, the reflex of MLG /u:/ is [ʏ] which could not have come from modern Soest [ui] and, in addition, shows a separate reflex from that of MLG /i:/ which the modern Soest long vowel reflexes do not. The Faroese Verschärfung shows that diphthongs may participate in this sound change as such. In Faroese it is clear that the Verschärfung occurred after diphthongization of the long vowels: OWS /u:/ = Faroese [YU], but [kɪgv] 'cow'. In the Faroese example, one could say that the front quality of the first diphthong element has become the characteristic of the short vowel while the back rounded features of the second diphthong component has been split into a velar stop plus a rounded spirant. Rischel has commented on this apparent development. (Rischel 1968, p. 113).

Table I shows that only those vowel reflexes which must have been high and high mid long monophthongs at the time of Hiatschärfung took part in the sound change. This seems rather odd. Why shouldn't the open mid row of long vowels - diphthongal or not - participate in the Hiatschärfung? On the assumption that no sound change is unmotivated and that paradigmatic changes can occur in response to threats to their distinctiveness, we must conclude that no threat existed to the contrastiveness of the open mid vowels from the loss of medial -d-. Those reflexes which did contribute Hiatschärfung reflexes show a complete short vowel system, minus the isolate low vowel a:

I	Y	U
ε	œ	ɔ

It follows, then, that there did not exist a set of short vowels to correspond to the open mid vowels; therefore, their contrastiveness was safe.

Short vowels lengthened before lost -d-. We have assumed that the non-high vowels lengthened in the open syllables of disyllabic words, including those with -d-. In their modern reflexes in hiatus in Table I these non-high vowels are centering diphthongs with lengthened first members. However, the high vowels have become completely long before this hiatus or have been reanalyzed as old long vowels: Soest [snɪ-ə] 'schnitte' [snuɪə] 'brodschnitte', [rʊɪə] 'rüde, hund' ([-ə] means the form is disyllabic). If the loss of -d- occurred before open syllable lengthening of the high vowels, the Hiatschärfung response would have been more appropriate and economical

than a mass diphthongization of old long vowels since only one position of contrast was at issue and it could be handled as the problem of hiatus vs. non-hiatus in two-syllable words. Therefore, a structure exchange of hiatus would amount to a minor restructuring of the set of contrasts instead of wholesale changes in the long vowel system. It follows from this reasoning that the loss of medial -d- and Hiatschhärfung as its response occurred after open syllable lengthening of non-high vowels and the exchange of vowel heights of the mid vowels but before the open syllable lengthening of high vowels. Otherwise, we might expect the high vowels in the hiatus from lost -d- to be centering diphthongs with lengthened first elements like the non-high lengthened vowels. According to Lasch, these diphthong reflexes of lengthened vowels are very early and very stable, their attestation being late because centering diphthongs struck early writers as too changeable to write. (Lasch, 1914, p. 35).

We can now hypothesize that the explanation of late diphthongization of the high and high mid vowels in Soest was due to late open syllable lengthening of the short high vowels. Again, we will assume that these changes were simultaneous and interdependent: open syllable lengthening of /i, u, u/ was a syntagmatically conditioned change to which the high and high mid long vowels responded by diphthongization.

This analysis finally allows us to summarize these complex developments in a schema which shows how they are related:

I.-Innovation (syntagmatic) II.--Response (paradigmatic)

- | | | | |
|----|--|---|--|
| 1. | Open syllable lengthening of short vowels in CVCV words (non-high vowels /a, e, o/ only) | ↔ | Close mid and open mid old long vowels exchange vowel heights by reciprocal diphthongization |
| 2. | Loss of medial -d- | ↔ | Hiatschhärfung |
| 3. | Open syllable lengthening of high short vowels (/i, u, u/) | ↔ | Diphthongization of high and high mid old long vowels |

From this schema, I would predict that ordering paradoxes would arise if the rules describing (1)-Innovation and (1)-Response were to be ordered with reference to each other as we have seen in Anderson's attempt to order the changes in (2). Ordering paradoxes ought to arise from (3) as well. However, the changes in Column I can be ordered with respect to each other as can the paradigmatic changes in II. It is difficult to see how a synchronic analysis of a phonological system like that of Soest with a set of ordered rules could capture the interrelatedness of syntagmatic and paradigmatic changes. The schema proposed above satisfies the criteria suggested by Jakobson, namely, that when the equilibrium of a system is disrupted, adjusting sound changes will tend to occur

until equilibrium is reestablished. Each of the three sets of changes achieved equilibrium until the next innovative disruption appeared. This approach to understanding the structure of a phonological system has been cast in the form of cause and effect rather than rules which describe correspondences between successive states. For that reason, it would seem to offer more insight into the organization of a phonological system and in particular into the relationship between syntagmatic and paradigmatic sound change. Since paradigmatic changes do occur, they should be shown to be systematically generated by the system in which they arise.

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References:

- Anderson, Stephen R. 1969. West Scandinavian vowel systems and the ordering of phonological rules. Indiana Linguistics Club.
- Anderson, Stephen R. 1974. The organization of phonology. New York: Academic Press.
- Grundt, Alice Wyland. 1974. Open syllable lengthening in English: a study in compensatory phonological processes. Ann Arbor: University Microfilms. Ph.D. Dissertation, UC-Berkeley.
- Grundt, Alice Wyland. 1975. Medieval Germanic Verschärfung as a paradigmatic compensation. San Jose Occasional Papers in Linguistics. 1.72-81.
- Grundt, Alice Wyland. 1976. Compensation in phonology: open syllable lengthening. Indiana University Linguistics Club.
- Grundt, Alice Wyland. 1977. Hiatschärfung in Low German: language change and rule change. Paper given at LSA Annual Meeting, Chicago.
- Holthausen, Ferdinand. 1886. Die Soester Mundart. Norden und Leipzig: Diedrich Soltau's Verlag.
- Jakobson, Roman. 1928 (1971). The concept of the sound law and the teleological criterion. Selected Writings, Vol. 1. The Hague: Mouton. 1-2.
- Jakobson, Roman. 1972 (1931). Principles of historical phonology. In: A reader in historical and comparative linguistics, Allan R. Keiler, Ed. New York: Holt, Rinehart and Winston, Inc. 121-138.
- Lane, Michael, Ed. 1970. Introduction to structuralism. New York: Basic Books, Inc.
- Lasch, Agathe. 1914. Mittelniederdeutsche grammatik. Halle: Verlag von Max Niemeyer.
- Müller, Reinhold. 1960. Zur Entwicklung der altsächsischen kurzen Vokale in offener Silbe vor intervokalisches ausgefallen d in westfälischen Mundarten. Münstersche Beiträge zur niederdeutschen Philologie. 24-46.
- Rischel, Jørgen. 1968. Diphthongization in Faroese. Acta Linguistica Hafniensia. XI.1.89-118.
- Roe, Harold Anthony. 1965. Verschärfung in Faroese. Harvard Ph.D. Dissertation (unpubl.)

- Schirmunski, V. M. 1962. Deutsche Mundartkunde. Berlin:
Akademie Verlag.
- Siebs, Theodor. 1889 (1966). Zur Geschichte der englischen-
friesische Sprache. Wiesbaden: Dr. Martin Sändig oHG.
- Wiesinger, P. 1970. Phonetisch-phonologische Untersuchungen zur
Vokalentwicklung in den deutschen Dialekte, Bd. I. Berlin:
Walter de Gruyter & Co.
- Wyld, Henry Cecil. 1914. A short history of English. London:
John Murray, Albemarle St., West.