Historical linguistics – lecture 4 STRUCTURALISM AND SOUND CHANGE

Ferdinand de Saussure (1857-1913) was the originator of structuralism in linguistics (*Course in General Linguistics*). Saussure's thought is often presented as a series of dichotomies.

1) He focused not on the use of language (*parole*, or speech), but rather on the underlying (abstract) system of language (*langue*) and called his theory *semiology*.
2) This approach focused on examining how the elements of language related to each other in the present, that is, 'synchronically' rather than 'diachronically'. The Neogrammarians held that only historical linguistics was truly scientific, Saussure believed synchronic study to be primary
3) syntagmatic (sequential) vs. paradigmatic (systemic) relations in language. Neogrammarians focused on syntagmatic relations (e.g. how one sound influences another in cases of assimilation), Structuralists were more interested in paradigmatic relations

Saussure's *Course* influenced many linguists. In America, Leonard Bloomfield developed his own version of structural linguistics, as did Louis Hjelmslev in Denmark. Most importantly, however, members of the **Prague School** of linguistics such as Roman Jakobson and Nikolai Trubetzkoy conducted research that came to be greatly influential. The clearest and most important example of Prague School structuralism lies in **phonemics**. Rather than simply compile a list of which sounds occur in a language, the Prague School sought to examine how they were **related** (the paradigmatic aspect). The units of language are contrastive and relational, and can only be understood by considering their place within the language system.

The two dominant approaches to sound change within structuralism were **AMERICAN STRUCTURALISM** broadly based on Bloomfield (1933) and **FUNCTIONALISM** based on **Prague School** work (see Vachek 1966:6-7), particularly as developed by Martinet (1952, 1955) as an approach to phonological change.

Key aspects of **AMERICAN STRUCTURALISM** central to an understanding of its approach to sound change are the focus on synchronic phonology and, correspondingly, on a language's phonemic system. Accordingly, the structuralists made a strict distinction between **phonetic** and **phonemic** change (Hockett 1958:442).
Phonetic change involved the very gradual, random shifting of phones which, although imperceptible to speakers in their lifetimes, could lead to significant phonetic differences between a given phone and its reflex over a period of time.
It was this impact of sound change on the **system** that was a major concern of the structuralists as reflected in the development of a typology of **phonemic** change involving two major types, **merger** and **split**.
Nevertheless, in spite of the detailed discussion of changes in phonemic systems, it is fair to say that the structuralists did not investigate the mechanisms of sound change or their motivations. For example, only about a page of Hoenigswald (1960:72) is devoted to the types of conditioning involved in sound changes and only one motivating factor is considered in any detail; namely, **ease of articulation**, and all changes discussed are considered articulatory simplifications. This lack of investigation on mechanisms and causes also derives from the position that the driving forces behind linguistic change involve essentially system-external factors that are not subject to linguistic study. Accordingly, we still find an echo of Bloomfield's (1933:385) pronouncement that the "causes of sound change are unknown" in

Hockett's (1958:389) position that "the causes of sound change cannot be found *within the system of habits we call language*"
In sum, the structuralists were most successful in **cataloguing the ways in which phonemic systems can change.**

- unconditioned vs. conditioned

when a change occurs generally and is not dependent on the phonetic context in which it occurs, it is *unconditioned*
when a change takes place only in certain contexts (it depends on neighbouring sounds, position in a word, other aspects of grammar), it is *conditioned*

- non-phonemic (a.k.a. allophonic) vs. phonemic

the distinction has to do with the recognition of distinct levels of phonological analysis in linguistic theory – the phonetic level and the phonemic level
Non-phonemic changes are sometimes called shifts, referring to the shift in pronunciation (at the phonetic level) with no change in the number of distinctive sounds. A *phonemic* change is defined as one which does affect the inventory of phonemes.

Examples:
non-phonemic unconditioned
some changes forming part of Grimm's Law:

PIE	*dō	*dhō
PGmc.	*tō	*ɣō
OE	tō 'to'	dōn 'to do'

PIE *d → PGmc. *t
PIE *dh → PGmc. *ɣ

No contrast is lost no new contrast is introduced, so the change qualifies as non-phonemic. The example reveals, in fact, certain problems with this traditional classification. Some people would claim that since the development entails a radical change in the feature system it is phonological.
non-phonemic conditioned
Polish nasal vowels
nasal vowels in Polish have a diphthongal nature: wąs [vɔ$^{\widehat{w}}$s], ksi[ɔ$^{\widehat{w}}$ʃ]ka
word-finally they may undergo reduction: trac[ɛ$^{\widehat{w}}$] → trac[ɛ]

phonemic changes (mergers and splits)
Mergers are changes in which two or more distinct sounds merge into one, leaving fewer distinct sounds (phonemes) in the phonological inventory. (A,B → B or A,B → C)
PIE *o, *ə, *ɑ → PGmc *ɑ

	PIE	*Greek*	*Latin*	*Gothic*	*English*
*o	*oktōu	oktō	octo	ahtau	eight
*ə	*pəter	patēr	pater	fadar	father
*ɑ	*ɑgro	agros	ager	akrs	acre

WGmc →	OE	
ɑ:	æ:	(OHG hār, OE hǣr)
ɑi	æ:	(PGmc *lɑidjan, OE lǣdan)

An important axiom about mergers is that mergers are irreversible, when sounds have merged a subsequent change will not be able to restore original distinctions

Splits

(A → B, C) in splits sounds themselves do not change in any physical way. Rather it is the merger of other sounds in their environment which causes the phonemic status of the sounds involved to change from being predictable conditioned variants of sounds (allophones) to unpredictable, contrastive, distinctive sounds (phonemes)

I-umlaut

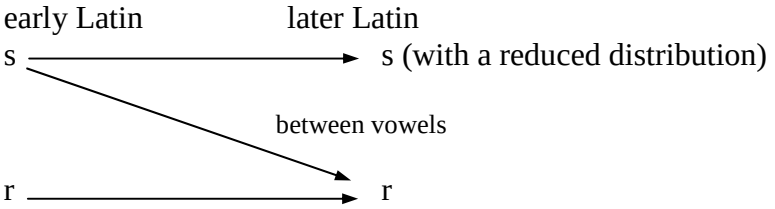
	PrGmc (stage 1)	(stage2)	OE (stage3)
'mouse'	mūs	mūs	mūs
'mice'	mūsiz	mȳsi	mȳs
'foot'	fōt	fōt	fōt
'feet'	fōtiz	føti	føt

/n/, /ŋ/ split in the history of English

- the above examples of splits illustrate what is sometimes known as *secondary split* (or phonologization). In secondary split a total number of phonemes increases.

- there is another kind of split known as *primary split* (also known as conditioned merger). In primary split an allophone merges with some other already existing phoneme, but only in some specific environment. The number of phonemes remains unaltered.

rhotacism in Latin s → r / V_V
L. *flōs* - *flōris*
seen also in English loans from Latin *rural – rustic, opus – opera, corpus - corpora*



the phonemic changes discussed (mergers and splits) above can also be divided into conditioned and unconditioned.

FUNCTIONALISM

While the American structuralists appeared to view the phonological system as a kind of passive repository for changes brought about through random phonetic drifts, the exploration of the role of the system itself in bringing about change was central to the work of the

functionalists. In contrast with the American structuralists, Martinet (1952:22) "assumed a never-ceasing phonological fermentation" involving conflicting forces both within the phonological domain, and between phonological and non-phonological domains. In the case of the phonological system, the main ingredients in this fermenting brew are **structure, function, inertia and asymmetry** (of the speech organs) and each of these plays a role in sound change.

From the perspective of **structure**, the preferred phonological pattern is a symmetrical one having no gaps. One role of functionalism is to provide a basis for explaining why mergers are not rampant even though phonetic drift is a fact of performance. Here Martinet (1952:4) introduces a "margin of security" that works to preserve the distance between phonemes in phonological space, ensuring that communication (**function**) will not be impeded by extensive mergers. The stage is now set to explain pattern or paradigmatic change. In a **system** with **gaps** and **non-correlated** phonemes, pressure will be exerted through the correlations to attract errant phonemes into integrated patterns. Functionalism assumes that a symmetrical arrangement of phonemes in phonological space is ideal, and asymmetrical patterns will be subject to symmetry adjustments.

From a functionalist perspective, it is also assumed that phonemes can impact each other in phonological space, so two types of chain shifting are identified (Martinet 1952:11). Given two phonemes A and B, a "push chain" arises when a change affecting A results in a decrease in the margin of security between the two phonemes. As A moves towards B's phonological space, B shifts in tandem away from the encroaching A. In the case of a "drag chain", A moves away from B allowing B to move into its vacated space.

On the basis of **structural** and **functional** factors alone, perfectly **symmetrical** phonological systems with no instances of merger would be expected. The opposing forces are **inertia** and **asymmetry**.

Inertia, Martinet's (1952:28) version of the principle of least effort, can lead to mergers and loss of phonemes.

The **physiological asymmetry** of the oral cavity can work against functionalist and structuralist principles. Although a symmetrical arrangement of front and back vowels might be expected, the more limited phonological space in the back vowel region can result in overcrowding which can in turn lead to changes such as the fronting of *u* (*u* > *y*), diphthongization, merger, and other developments affecting only the back vowels.

The various forces may also interact in bringing about change. For example, the physiologically-motivated process of *u*-fronting could trigger a functionally-motivated push chain, while structural factors work at maintaining or restoring symmetry.

Martinet's framework of phonological change has been discussed and applied by various linguists (e.g., King 1967, Wang 1967, Haudricourt & Juilland 1970[1949], Moulton 1961, Peeters 1992, Boersma 1997), and the ideas have not lost their relevance in spite of changing theoretical frameworks and interests.

Arguing that "the need to preserve information is relatively weak", Labov (1994:550) grants only a very limited role to functionalism and accepts the Neogrammarians' mechanistic approach as essentially correct.

There is also continued discussion of the motivation for chain shifting. Kiparsky (1988:392) observes that gap filling and drag chains would be explainable without reference to functional principles in terms of markedness or preference principles referring to simplicity or symmetry.

The contribution of **FUNCTIONALISM** remains important for its emphasis on paradigmatic factors and the role of the system itself in phonological change.

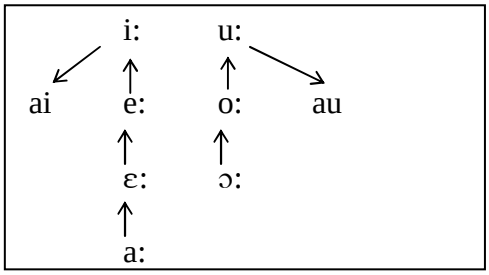
1. Changes tend to create/restore balance (structure)
Fricatives in the history of English

2. Maximum differentiation in phonological space (function)

OE long vowels		ME long vowels	
iː yː	uː	iː	uː
eː (øː)	oː	eː	oː
		ɛː	ɔː
æː	ɑː	aː	

3. **Change in one part of the system will often have knock-on effects** (structure + function)
Grimm's Law
IE /bh, dh, gh/ → Germanic deaspirates them to /b, d, g/.
• BUT there are already /b, d, g/ phonemes in Germanic → these devoice to /p, t, k/.
• BUT there are already /p, t, k/ phonemes → these fricativise to /f, θ, x/.

English Great Vowel Shift



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Modern Theories of Linguistic Change: An overview Robert W. Murray Department of Linguistics The University of Calgary
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