

### 1. Chain Shifts.

Some changes appear to be triggered by the **structure** of sound systems.

In certain dialects of English in New York, Chicago, and other large urban areas of the northeastern US, [æ] diphthongized to [æə].<sup>1</sup> The diphthong tends to be strongly nasalized, and the first element, [æ], tends to rise to a mid- or even high-vowel. Words like *Ann* thus tend to be pronounced as [æən], [eən], or [iən].

This change created an imbalance in the vowel system, which induced further changes: In both New York and Chicago, there was a system-based reaction to [æ] leaving its position as a low front vowel.

In Chicago, the central vowel [a] began to shift to the position [æ] had held, so that the pronunciation of *John* became like that of *Jan*.

In New York, the vowel [a], like [æ], diphthongized and moved up toward the position of [u], so that *coffee* [kafi] changed to [koəfi] or [kuəfi].

(1)	Chicago shift		New York shift
	i	u	i
	↑ <sub>1</sub>		↑ <sub>1</sub>
	æ	← <sub>2</sub> a	æ
			↑ <sub>2</sub>
			a

Developments like this, where one change within a given phonological system gives rise to another, are called **chain shifts**. The New York case is called a **solidarity chain**.

Another solidarity change: Fronting in Central Illinois:

(2)	boot [buwt] > [bʰt]
	foot [f t] > [fʰt]
	go [gow] > [gəw]
	cut [k t] > [kət]

Shifts that are motivated by a **gap** which ‘pulls’ or ‘drags’ other sounds into that gap are called **pull chains**, or **drag chains**. Thus, in a pull chain one change may create a **gap** in a system, which is then followed by another change to fill that gap, by ‘pulling’ or ‘dragging’ another sound from the system into that gap. This may then create another gap, which then causes another change to fill that gap, and so on.

(3)	French	
	i	← <sub>1</sub> u
	e	↑ <sub>2</sub> o
	æ	↑ <sub>3</sub> a

**Push chains:** if a sound starts moving into the space of another sound, this may cause the sound whose space is being invaded to itself move into another sound’s space (which may already be occupied, creating another push.)

Example: Intervocalic consonants from Classical Latin to Spanish:

(4)	∅	∅	Latin <i>regina</i> > Spanish <i>reina</i> ‘queen’
	↑ <sub>3</sub>	↑ <sub>3</sub>	
	b	d	Latin <i>amika</i> > Spanish <i>amiga</i> ‘friend’
	↑ <sub>2</sub>	↑ <sub>2</sub>	
	p	t	Latin [bukka] > Spanish [boka] ‘mouth’
	↑ <sub>1</sub>	↑ <sub>1</sub>	
	pp	tt	kk

The Great Vowel Shift in English also results from a chain shift (see p. 52, Figure 2.1). This is largely responsible for the multiple sounds attached to English vowel letters: *i* can represent both [i] and [ay], depending on whether it was originally a short or long vowel, and the vowel letters *a*, *e*, and *i* are [ey], [i], and [ay], in contrast to most other European languages which have [a], [e], and [i].

### 2. Analogy and Sound Change

*Sound change is regular and causes irregularity; analogy is irregular and causes regularity.* p. 96, Table 4.1, Latin rhotacism.

<sup>1</sup> The discussion of this change is based on that in Hock and Joseph 1996.