

The Sound Changes which Distinguish Germanic from Indo-European

The Germanic Accent Shift

In Indo-European accent (or word stress) was probably indicated by pitch and could fall on any syllable in the word. The placement of the accent depended on the length of the word and the nature of the morphological elements it contained. In Germanic, the **IE movable pitch accent** became a **fixed accent**, probably based on loudness. The Germanic accent was fixed on the root-syllable of the word. Since most IE prefixes disappeared at much the same time, the root-syllable was most often the first syllable. The unaccented syllables which followed the accented root-syllable tended to become reduced in loudness and have tended to become less distinct or even disappear over the course of time. Since many of these syllables were grammatical endings in IE, the Germanic languages have lost many of these endings.

First Germanic Sound Shift

The **First Germanic Sound Shift**, better known as **Grimm's Law**, was first described by Jacob Grimm in 1822. Grimm's Law affected the Indo-European **stop consonants**, or **stops**, which could be articulated as labial, dental, or velar sounds. IE also had a few other stops, but these were not developed in Germanic. Hence the IE dialect which gave rise to Germanic had the following stop consonants:

	<u>Labial</u>	<u>Dental</u>	<u>Velar</u>
Voiceless stops	p	t	k
Voiced stops	b	d	g
Voiced aspirate stops	bh	dh	gh

The sounds /bh, dh, gh/ do not exist in Present-Day English. They are similar to voiced stops with an accompanying breath of air. The changes identified by Grimm are as follows:

Voiceless Stops become Voiceless Fricatives

IE	p	t	k
Gmc after Grimm's Law	f	θ	x (> h in Old English)

Voiced Stops become Voiceless Stops

IE	b	d	g
Gmc after Grimm's Law	p	t	k

Voiced Aspirates become Voiced Fricatives*

IE	bh	dh	gh
Gmc after Grimm's Law	ḅ	ð	ȝ

*/ḅ/ represents a bi-labial fricative (like /v/, but with both lips together rather than with the top teeth on the bottom lip), and /ȝ/ represents a velar fricative rather like a gurgle. Usually the voiced fricatives developed into voiced stops (/b, d, g/) later in history, so that we can ultimately say the IE voiced aspirates became voiced stops. However, depending upon the position in the word, these sounds could also develop to /v, ð, j/.

Except in special circumstances, any IE word which contained the original consonants developed the new consonants after Grimm's Law. We can see this if we compare some words from languages in other IE families, which did not undergo Grimm's Law.

<u>English</u>	<u>Other IE Forms</u>
Voiceless Stops (IE p, t, k)	
<u>f</u> ather	pater (Latin), pitar (Sanskrit)
<u>f</u> oot	pes, ped- (Latin)
<u>f</u> ish	piscis (Latin), pesce (Italian)
<u>th</u> ree	tres (Latin, Spanish), trayas (Sanskrit)
<u>th</u> ou	tu (French)
<u>h</u> ound	sun (Sanskrit), canis (Latin)
<u>h</u> undred	centum (Latin), satem (Sanskrit)
<u>h</u> emp	kánnabis (Greek)
Voiced Stops (PrIE b, d, g)	
<u>t</u> wo	dva- (Sanskrit), duo (Latin), dos (Spanish)
<u>k</u> now	gignoskein (Greek)
<u>k</u> nee	genu (Latin)
<u>a</u> cre	ajras (Sanskrit), ager (Latin)
Voiced Aspirates (PrIE bh, dh, gh)	
<u>dh</u> o	dha (Sanskrit), feci (Latin)
<u>w</u> agon	vah- (Sanskrit), veho (Latin)

All these words are described *cognates*; that is, they all have a common descent from an earlier parent language, but they are not borrowed from each other. Hence a word like English *two* is a cognate of Latin *duo*. However, the English word *duo* (as in ‘the Dynamic Duo’) is borrowed directly from Latin and is therefore considered a *loanword*.

Grimm’s Law probably took place because of instabilities in the IE stop system. Each series of consonants was characterised by three distinct features: stopping, voicing, and aspiration. The systemic relation between the sounds can be visualised in the table below:

	STOPPING	VOICING	ASPIRATION
voiceless stops	yes	no	no
voiced stops	yes	yes	no
voiced aspirates	yes	yes	yes

Notice that all three features are needed to distinguish the consonants. However, this is no longer the case after Grimm’s Law:

	STOPPING	VOICING	ASPIRATION
voiceless stops	yes	no	no
voiceless fricatives	no	no	no
voiced fricatives	no	yes	no

Grimm’s Law effectively made aspiration a redundant feature of the system, since none of the resulting sounds were aspirated. Even when the voiced fricatives later became voiced stops, the system was still based only on voicing and stopping. This provides one motivation for the sound shift. Grimm’s Law made aspiration completely redundant. Afterwards, all three series could be distinguished by only two features, instead of three features.

An apparent exception to Grimm’s Law occurs where an IE voiceless stop followed another voiceless stop or the voiceless fricative /s/. For example, compare Latin *stella* and *rēctus* with their English equivalents *star* and *right*. If Grimm’s Law had affected these forms, we would expect them to have a /θ/ sound instead a /t/ sound. It is important to realize that after voiceless stops and /s/ no voiced sounds

could occur. Due to a process called **assimilation**, any voiced sound which may have occurred in this environment in early IE would have become voiceless under the influence of the preceding voiceless consonant. The same thing happens in the English words *robbed* /rɒbd/ and *stopped* /stɒpt/, where the /d/ become voiceless /t/ because the preceding /p/ is voiceless.

We must now address the actual process by which Grimm's Law took place. Did all the changes happen at once, or did some changes precede others? One possibility is known as the **Drag-Chain Model**. According to this model, Grimm's Law was initiated by a change of the original voiceless stops to voiceless fricatives. The original voiced stops were then 'dragged' in the resulting 'gap' in the system. There are several problems with this model:

1. If the first change were of voiceless stops to voiceless fricatives, the result would have been a 'gap', or asymmetry, in the system. Although languages can function with such 'gaps', they are generally avoided unless there is some other motivation.
2. Since languages *can* function with such 'gaps', there is no necessary reason why the voiceless stop 'gap' should have been filled; some other motivation is required.
3. If this were a drag chain, the voiced aspirates should not have become fricatives; they should have become voiced stops in order to fill the 'gap'. This did not happen until much later in Germanic, and only gradually and incompletely.
4. The Drag-Chain model does not explain the failure of Grimm's Law after voiceless stops and the voiceless fricative /s/.

Another possibility is the **Push-Chain Model**. In this model aspiration was nearly redundant in the IE stop system: it only distinguished voiced stops from voiced aspirates. So these sounds 'pushed' apart in order to maximise the differences in their articulation. This caused a subsequent 'push' on the voiceless stop series. In other words, the voiced stops and voiced aspirates changed first in response to their close articulation; the change of voiceless stops to fricatives was a secondary change. The Push-Chain Model has several advantages:

1. The initial change of IE voiced stops to voiceless stops makes necessary the secondary change of IE voiceless stops to voiceless fricatives in order to maintain essential distinctions in the system.
2. The 'pushing apart' of the voiced stops and voiced aspirates provides an explanation for the production of new fricatives: the new sounds were now distinguishable as stop and non-stop consonants.
3. If the 'trigger' for the change came from the 'pushing' of the IE voiced stops on the IE voiceless stops, then it stands to reason that that 'trigger' would not exist in environments where voiced stops could not exist: that is, after voiceless stops and voiceless /s/. These are precisely the environments where Grimm's Law does not take place.

Verner's Law

Although Grimm's Law affected the majority of stop consonants in IE, another apparent exception went unexplained for many years after Grimm. Consider the following forms of the verb meaning 'to turn' in Old English and Sanskrit.

	<u>Sanskrit</u>	<u>Old English</u>
I turn	vártami	ic weor þe
I turned	vavárta	ic wear þ
they turned	vavrtimá	hie wur don
turned	vavrtaná	gewor den

The Sanskrit forms show that the consonant at the end of the root-syllable was a **t* in IE. The Old English *weorþe* and *weorþ* have /θ/, as we would expect after Grimm's Law. But how do we explain the *d* in *wurdon* and *geworden*?

This unexpected development was explained by Karl Verner in 1875 and has come to be known as **Verner's Law**. He noticed that, after Grimm's Law occurred, consonants were voiced if they occurred before the accented syllable. Hence **wurþon* and **worþen* became **wurðon* and **worden*. The voiced fricatives then became voiced stops later in history, as described above. Since the Old Norse forms *varðon* and *gavarðon* still have the fricatives, we can assume that that change took place in West Germanic.

As you can see, Verner's Law had a large impact on the Germanic verb system. In English, that impact has been gradually reduced by process of **analogy**. For instance, Verner's Law caused an alternation between /s/ and /z/ in some words, and the /z/ became /r/ in West Germanic. Hence in Old English we have the verb *ċēosan* 'to choose', *ic ċease* 'I chose', *hīe curon* 'they chose', *coren* 'chosen'. The alternation between /s/ and /z/ (> /r/) still existed in Old English, but later on the /s/ gradually spread to all the forms.

The Timing of the Changes

In order for Verner's Law to work, we have to assume that Grimm's Law and Verner's Law took place before the Germanic Accent Shift, that is, before the accent became generally fixed at the beginning of the word. It has been estimated that Germanic first became distinct from Indo-European around 1000 BC. West Germanic probably branched off around the beginning of the first century AD.