

Historical linguistics: The study of language change

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Language moves down time in a current of its own making. It has a drift ... gradually transforming itself into a language so different from its starting point as to be in effect a new language. Edward Sapir, *Language* (1921: 150)

0 INTRODUCTION

As the quotation from Edward Sapir makes clear, languages are in a constant state of change, or **drift**. The scientific study of language change began in the nineteenth century and is known as “historical linguistics”, or “diachronic linguistics”. But those interested in language – and most speakers are – have always been aware of language change and diversity, and have often been concerned about it. The earliest grammar of Greek in the first century BCE seems to have been written in part because of the recognition of changes between Homeric Greek of the eighth century BCE and the dialect spoken at the time.

If you read discussions of language change in the popular media – and especially letters to the editor and online comments – your overwhelming impression will be that language change causes great consternation for speakers and writers. Why do people believe that language change is bad and should be resisted and restrained, if at all possible? Surprisingly, it is generally *not* because language change, as it is experienced by speakers in a community at a particular time, impedes or restricts communication. Moreover, there is no evidence that it leads to decay, corruption, or loss of efficiency or beauty. Rather, there seem to be a number of social reasons for this view.

Apart from our general resistance to change and our nostalgia for things remaining “as they always have been”, we can point to a number of more specific reasons:

- **Social class prejudice:** The “standard” form of a language is typically a class dialect spoken by the educated middle and upper classes of society and institutionalized in the educational system, government, and business. Change affecting this standard may be perceived as not only an attack on language but a threat to the social order.
- **Linguistic “purism”:** Changes brought about through language contact may be seen as affecting the “purity” of not only language but also of society in general.
- **Fear of the power of the young:** Innovation in language begins in the speech of young people and can thus be understood as a challenge to the position and power of the older generation.
- **Outmoded ideas about the nature of grammars:** nineteenth-century grammarians considered the highly inflected (synthetic) grammars of Latin and Greek as the most advanced type of grammar. The loss of inflections and the development of more “analytic” forms of grammar – changes much in evidence in the history of English – could be seen as movement toward a less highly valued form of grammar.

Since the beginning of the twentieth century historical linguists have viewed change as an inevitable fact of language, and not as a process that leads to either decay or progress. This will be the view adopted in this chapter.

1 AN EXAMPLE OF LANGUAGE CHANGE: THE HISTORY OF ENGLISH

For many languages, such as Chinese or Japanese, we have very long recorded histories whereas for other languages the written records are much younger, or even non-existent, as in the case for most indigenous languages. Studying change in the latter type of languages is possible, but poses considerable challenges (see section 3). For English, our extensive thousand-year record of written texts allows us to witness many changes in the language. Because the history of English has been well studied, it will provide many of the examples in this chapter.

1.1 The periods of English

The English language is traditionally divided into a number of periods, based in part upon linguistic evidence and in part upon social and political events:

- Old English (OE; up to 1100)
- Middle English (ME; 1100–1500)
- Early Modern English (EModE; 1500–1700)
- Modern English (ModE; 1700–present).

The last period is sometimes divided into Late Modern English (1700–1900) and Present-day English (1900–present).

1.2 Change in a Shakespeare sonnet

We will begin with a comparison of Early Modern English, or the language of William Shakespeare (from the first decade of the seventeenth century), with Present-day English. In the recorded history of English this is a relatively short period of time, 400 years. In fact, Shakespeare’s language is considered an “early” version of Modern English and thus relatively comprehensible for modern speakers. Middle English, and especially Old English, would for be virtually unintelligible.

Here is an excerpt from Shakespeare’s Sonnet 12.¹ Although poetry allows certain license, we assume that the language of poetry cannot depart too far from the linguistic conventions of the time or risk being unintelligible.

- (1) ... When lofty trees I see barren of leaues,
Which erst from heat did canopie the herd
And Sommers greene all girded vp in sheaues
Borne on the beare with white and bristly beard;
Then of thy beauty do I question make
That thou among the wastes of time must goe, ...
(Excerpt from Shakespeare’s Sonnet 12, Quarto 1, 1609;
http://internetshakespeare.uvic.ca/doc/Son_Q1/page/10/)

¹ Examples from Shakespeare are cited from the *Internet Shakespeare editions* (<http://internetshakespeare.uvic.ca>).

In this selection we see that change occurs *in all components* of the language. There are changes in spelling and capitalization conventions, of course, but the really significant changes are in the other components:

- Lexicon, or vocabulary: the word *erst* meaning ‘formerly’ would be marked as archaic or obsolete in current dictionaries.
- Morphology, or the forms of words: the most obvious difference here is the use of the grammatical forms, *thy* and *thou*, the second-person singular or familiar pronouns (like *du* in German or *tu* in French), which have been lost (see section 4.5.2). We also might include the verb *canopy*, which is a noun in Modern English and only very rarely a verb (when a verb, it is a past participle functioning as an adjective, as in *a canopied bed*).
- Syntax, or word order: Modern English has the basic word order of Subject – Verb – Object/Complement. In Sonnet 12 we see cases where objects and complements precede the verb, as shown in Table 1. A difference that may have escaped your attention is the use of *do*. In Modern English we use *do* as a “dummy auxiliary” in questions (*Did you feed the dog?*), negative sentences (*I didn’t feed the dog*), and emphatic sentences (*I did too feed the dog/ I did feed the dog*) but not in non-emphatic declarative sentences, as in the second and fifth lines in the sonnet.

Table 1 Word order differences in Shakespeare’s Sonnet 12

Early Modern English	Modern English
object – verb order	verb – object order
<i>lofty trees</i> [object] <i>I</i> [subject] <i>see</i> [verb]	<i>I see lofty trees</i>
prepositional complement – verb order	verb – prepositional complement order
<i>thou</i> [subject] <i>among the wastes of time</i> [prepositional complement] <i>must goe</i> [verb phrase]	<i>you must go among the wastes of time</i>
<i>of thy beauty</i> [preposition complement] <i>do I</i> [subject] <i>question make</i> [verb]	<i>I (do) make question of your beauty</i>

But what about differences in phonology between Shakespeare’s time and our own? When all we have of the earlier period are written records, how can we determine the pronunciation of the day? We must assemble all available evidence, including

- the statements of contemporary grammarians and lexicographers (though dictionaries of English did not include guides to pronunciation until the late eighteenth century),
- non-standard spellings, which often reflect actual pronunciation,
- representations of natural sounds in onomatopoeic words,
- the history of individual sounds in related languages,
- the structure of the phonological system (assuming universal principles of phonology hold, such as the symmetry of vowel systems), and

- rhymes, word plays, and puns.

While we must be cautious since partial rhymes are always a possibility, we see here that *herd* /hɜːd/ and *beard* /biːd/ do not rhyme in Modern English. We must decide, of course, whether in Shakespeare's time both had the vowel of *herd* or that of *beard*. By piecing together available evidence, we have determined that the vowel in both words was most likely another vowel entirely, namely [ɛ] or perhaps [e].²

2 THE INEVITABILITY OF CHANGE

2.1 The arbitrary nature of language

Implicit in Edward Sapir's quotation cited at the beginning of this chapter is the notion that language change is inevitable. All languages change, have changed, and will change. Only "dead" or "extinct" languages do not change. As long as a language is used by speakers, they will continually adapt it for purposes of communication; and perhaps less obviously, more or less mechanical factors internal to language itself will continue to bring about change. Underlying the inevitability of change – and making change possible – is the very nature of language itself.

Language is a system of **signs**, which by nature may be of three types:

- "iconic" signs, which resemble the thing they represent (as a photograph, a computer icon, or even an emoji);
- "indexical" signs, which are close to or point to the thing they represent (such as smoke to fire or symptoms to an illness or a scowl for displeasure); or
- "symbolic" signs, which represent a thing in an arbitrary way, as agreed upon by the users of the sign (such as a flag to a nation or a wedding ring to marriage).

Language has minor iconic aspects, such as onomatopoeic words like *buzz* or *purr*, and indexical or 'pointing' words like *this* or *that*. But otherwise it is overwhelming symbolic, or 'arbitrary', in nature.. There is no natural or inevitable connection between words and the things they represent. Rather, as speakers we agree to the forms and meanings of words. Like all such social agreements, language can be, and often is, changed by the consent of its users. Thus, it is the very nature of language to allow for change.

2.2 Universality of change

In section 1, we have seen an example of change in the history of an individual language, English. All recorded languages have changed over time. The Language Matters box presents an example of linguistic change in Japanese, using a sentence from the 11th century "Tale of Genji" (Genji Monogatari) by Murasaki Shikibu along with a modern "translation".³

Language change in Japanese

² See Crystal (2016: 47, 264).

³ The original text (transcribed in the Roman alphabet and punctuated by Eiichi Shibuya) may be found at the Japanese Text Initiative (<http://jti.lib.virginia.edu/japanese/genji/roman.html>). The passage is from Chapter 05 Waka Murasaki. I am grateful to Yuko Higashiizumi for this example.

Early 11 th c.	Suzume <i>sparrow</i>	no GENITIVE	ko <i>baby</i>	wo ACCUSATIVE	Inuki <i>Inuki</i> (NAME)	ga NOMINATIVE	nigasi <i>loose</i>	туру. COMPLETIVE	
21 st c.	Suzume <i>sparrow</i>	no GENITIVE	ko <i>baby</i>	o ACCUSATIVE	Inuki <i>Inuki</i>	ga NOMINATIVE	nigashi <i>loose</i>	chatta COMPLETIVE	no. FINAL PARTICLE

‘Inuki let baby sparrow(s) go.’

Early 11 th c.	Husego <i>basket</i>	no GENITIVE	uti <i>inside</i>	ni <i>in</i>	kome <i>coop_up</i>	tari RESULTATIVE	туру COMPLETIVE	mono <i>although</i>	wo.
21 st c.	Husego <i>basket</i>	no GENITIVE	naka <i>inside</i>	ni <i>in</i>	tojikomete <i>coop_up</i>	ita RESULTATIVE		noni. <i>although</i>	

‘Although (I/we) cooped them up in the basket (regrettably they are gone).’

There are no changes in basic word order and the case markers remain relatively unchanged (i.e. *no*, *wo/o*, *ga*). But we do see the rise of two new auxiliary verbs in contemporary Japanese: *chatta* from *te* + *shimat* + *ta* (verb conjugation + verb ‘put back’ + past tense) and *ita* from *te* + *i* + *ta* (verb conjugation + verb ‘exist’ + past tense). We also see semantic change: *uti* ‘inside’ becomes more abstract and is replaced by *naka* to express literal location, and *kome/komete* likewise becomes more abstract and subjective and must be reinforced by a second verb, *toji*, meaning ‘to close’. The more transparent concessive form, *mono* + *wo* (historically an abstract noun ‘thing’ with an accusative marker *wo*) is replaced by the more grammaticalized *noni* ‘although’. The change from *wo* > *o* is a sound change in the history of Japanese. Note also the use of the final particle *no* in Modern Japanese.

Over sufficiently long periods of time, linguistic change may also lead to the rise of new languages. We often represent the rise of new languages using the metaphor of the family tree, where there is a “parent” language and genetically related “daughter” languages. A well-known example is the Romance language family; here, the parent language, (Vulgar) Latin, gives rise to the daughter languages, Italian, Spanish, French, Romanian, and Portuguese, which have national status, as well as Provençal, Catalan, Sardinian, and Romansch, which lack national status. Each of the daughter languages progresses through its own historical stages (as we saw with English), for example:



2.3 Rate of change

No language is static, but how quickly a language changes may vary. A number of factors serve to slow down the rate of change:

- geographic isolation, insulating speakers from foreign influences;

- separation of the speakers from the home country, leading to the retention of conservative features and a reluctance to depart from traditional ways of speaking;
- political and social stability, eliminating the need for changes to meet a new order;
- a strong written tradition and established standard form of the language, placing a brake on change; and
- attitudes of linguistic “purism”, discouraging or retarding both externally and internally motivated changes.

But none of these factors can entirely eliminate change.

An excellent example of a language in which most of these factors apply is Icelandic. Living on a small island in the middle of the Atlantic Ocean, separated from their mother country (Norway/Sweden), enjoying (relative) political stability and a strong tradition of writing since they were Christianized in the year 1000, speakers of Icelandic have, until recently, closely guarded their language from external influence. But the effects of globalization, mass communication, and social media have led to more rapid changes on Icelandic as well.

An example in which none of these factors apply is the change from Old English to Middle English. Although some changes are already underway in Old English, the changes wrought by the Norman Conquest of England in 1066 are massive, caused by:

- political and social upheaval,
- extensive contact with French (which became the language of the English ruling class), and
- the lack of written records in English for about 200 years.

When we now call “Middle English” begins to be written again in the thirteenth century, it is almost unrecognizable as the continuation of the Old English pre-conquest language (we look below at a couple theories of what happened in this transition).

3 STUDYING LANGUAGE CHANGE

Language change begins in the interaction of speakers, and it is then spread through speech communities. If this is the case, how can we study language change in the pre-tape recorder age, when our only sources from the language are written records, or when in many cases we may have no records at all? If our written records are varied enough (both in time and space), they may suffice. But we are often in the position of having to fill in the gaps using:

- the availability of speech-like data (trial transcripts, drama, letters, etc.) from earlier periods, especially in electronic corpora;
- apparent-time studies vs. real-time studies (see below, 4.5.1);
- reconstruction, both external and internal; and
- other indirect sources (orthography, rhyme, contemporary commentary).

Traditionally, older forms and stages of the language have been determined by a deductive process called **comparative reconstruction** or the “comparative method”. In this process, the oldest stages of recorded sister languages are compared in order to work backwards to reconstruct the ancestor forms in the proto- (‘first’) or parent language. Changes are assumed to be regular and to follow known phonological processes. The ancestor forms are hypothetical and thus indicated by an asterisk (*) placed before the form.

Consider the cognates (related words) for ‘foot’ in some of the oldest Indo-European languages, given in the fourth column in Table 2.

Table 2 Cognates for ‘foot’ in Indo-European languages (data from Buck 1949: 241)

Language	Initial consonant	Final consonant	Word
Sanskrit	[p]	[d]	pad-
Greek	[p]	[d]	pod-
Hittite	[p]	[t]	pata
Latin	[p]	[d]	ped-
Gothic	[f]	[t]	fōtus
Old English	[f]	[t]	fōt
Lithuanian	[p]	[d]	péda ‘foot-track’
Armenian	∅	[t]	ot-n ‘footprint’

PIE *pod/-ped-

The comparative method systematically compares the consonants in initial and final positions, as shown in Table 2. We reconstruct *p for the initial consonant and *d for the final consonant. The apparent exception may be explained as follows:

- The change of p > f and of d > t in Germanic languages is accounted for by Grimm’s Law (as discussed in section 4.2.6),
- The developments in Armenian (loss of initial p and devoicing of d > t) are secondary but cross-linguistically well attested.

The root for ‘foot’ is reconstructed in Proto-Indo-European, as *pod-/ped-. The vowel system of Proto-Indo-European poses some difficulties for reconstruction and is complicated by the pervasive system of ablaut, or vowel gradation (see below).

A second process of **internal reconstruction** can be used to determine the original forms underlying variant forms within a single language. Thus, in English, we find vowel alternations in the present and past tense forms of the following verbs:

- (2) present [i] ~ past [ε]
 sleep ~ slept

keep	~	kept
bleed	~	bled

We assume that the tense forms had the same original vowel, which we reconstruct as *ē (in Germanic). The resulting vowels are explainable by known changes in the history of English:

- In the present tense the [ē] is affected by the Great Vowel Shift, a sound change affecting all long vowels and shifting [ē] > [i] in this case.
- In the past tense the [ē] is shortened to [ɛ] before a consonant cluster (as in *five/fifteen*). Note that *bled* originally had a double consonant –dd.

4 MOTIVATIONS AND MECHANISMS OF LANGUAGE CHANGE

We traditionally distinguish between “internal” and “external” causes of language change. Internal causes result from the internal operation of the sound system and the grammar within a language. External causes come about through contact with other languages.

4.1 Language contact

The effects of one language upon another can range from

- contact-induced language change to
- extreme language mixture (see below on Middle English as a creole) to
- language death.

Here we focus on the first type.

The majority of contact-induced changes affect the lexicon of a language, with far fewer changes in the phonology or grammar of a language. The lexicon consists “detachable items”,⁴ so the replacement of such item has little consequence to the system of the language. Words borrowed into another language are called **loanwords** or borrowings.⁵

4.1.1 *Loanwords and the directionality of change*

There are traditionally three ways of viewing the direction of change. We will illustrate with borrowings, but the effects are even more important in the case of phonology and grammar.

In a **superstratum** situation, the language of the politically/socially dominant group (e.g., the conquerors or colonizers) affects the language of the less dominant group. Often the less dominant language dies, but if it continues to exist, it will be substantially changed. Such a situation existed in the Middle English period, when after 200 years of domination by French, English reemerges, showing a massive influx of French vocabulary (see Table 3a for some examples; also section 4.3).

⁴ On the use of this term, see Aitchison (2013:150).

⁵ Borrowing is only one way in which new words enter the language. Language internal word formation processes, such as compounding and derivation, lead to the creation of new vocabulary.

In a **substratum** situation, the language of the less dominant group affects the language of the more dominant group. In most cases the effects are limited to a small set of lexical items. The aboriginal languages of North America function as a substratum in respect to English (see Table 3b).

In an **adstratum** situation, the two groups are relatively equal, and features may travel freely between and among the languages. Although not all would agree, it might be argued that French and English form an adstratum in Quebec, Canada. The effects of English on French are frequently commented upon (with fears expressed about the fate of Quebec English), while those of French on English are less well studied (see Table 3c).

Table 3 Lexical borrowings: superstratum, substratum, adstratum scenarios

a. superstratum: Loanwords from French into English (ME period)			
<i>blanket</i>	<i>grocer</i>	<i>army</i>	<i>reduce</i>
<i>melody</i>	<i>battle</i>	<i>art</i>	<i>refer</i>
<i>dinner</i>	<i>niece</i>	<i>collar</i>	<i>perceive</i>
<i>porch</i>	<i>tavern</i>	<i>poet</i>	<i>devout</i>
b. substratum: Loanwords from indigenous languages into North American English			
<i>sasquatch</i>	from Salish	<i>moccasin</i>	from Powhatan
<i>kayak</i>	from Inuit	<i>totem</i>	from Ojibwa
<i>skunk</i>	from Abenaki	<i>moose</i>	from Eastern Abenaki
<i>muskeg</i>	from Cree	<i>toboggan</i>	from Mi'kmaq
c. adstratum: Loanwords from Quebec French into Quebec/Canadian English ⁶			
<i>dépanneur/dep</i>	'corner store'	<i>tisane</i>	'herbal tea'
<i>guichet</i>	'bank machine, ATM'	<i>cinq-à-sept</i>	'happy hour, lit. five-to-seven'
<i>caisse populaire/caisse pop</i>	'credit union'	<i>pure laine</i>	'Quebecker of pure French Canadian origin, lit. pure wool,'
<i>kétaine</i>	'tacky, kitschy'	<i>terasse</i>	'sidewalk café'

4.1.2 Phonological and grammatical borrowings

The adoption of phonological features from one language to another occurs relatively infrequently. It is most common in an adstratum situation, where a number of genetically unrelated languages are in contact geographically. For example, we find examples of the spread of tones in Chinese, Thai, and Vietnamese in southeast Asia, of retroflex consonants in Hindi and Dravidian on the Indian subcontinent, and of clicks in Bush-Hottentot and Bantu in southern Africa. In English, the sound [ʒ] was not originally part of the Old English sound system but was borrowed from French in words such as *beige*, *azure*, or *rouge*, and also developed through palatalization (as in *education*, *pleasure*, or *as yet*, said rapidly); the diphthong [ɔɪ] (as in *noise*, *joy*, or *voice*) was also a French borrowing.

⁶ See Boberg (2010: 183).

In the late Old English period, we see some interesting grammatical changes resulting from contact between Old English and Old Norse speakers. Viking invasions led to the settlement of Norse speakers in northern England, and a fairly extensive intermixture between speakers of the two Germanic languages (one North Germanic and one West Germanic). The most significant borrowing was of the Norse third person plural pronoun forms *they*, *their*, *them*, replacing the inherited English forms, *hī*, *hira*, *him*. English also borrowed a number of other function words (*same*, *both*, *till*, *fro*) and a few basic verbs (*take*, *get*). This type of borrowing occurs only in the later stages of contact where there is extensive bilingualism and social factors favoring borrowing (Thomason 2001). For a different view, see the Language Matters box below.

4.1.3 *Middle English as a creole*

It has been suggested that the history of English provides evidence of contact-induced change beyond that of simple borrowing. The argument is that changes in the language during the Middle English period are the result of **creolization** of French and English, or the mixture of the two languages into one hybrid, but fully developed language (a “creole”). In this case the phonology and syntax are seen as deriving from Germanic (but with inflectional simplifications resulting from interference from French) and a lexicon from French (the “lexifier language”).⁷

This view is now solidly rejected, in part because we cannot identify a “pidgin” stage, that is, a functional but incomplete language that typically precedes creoles. No (or nearly no) morphological, grammatical, or phonological changes can be attributed solely to French. Grammatical changes in Middle English were all, for the most part, already underway in late Old English. Moreover, the southern dialects of Middle English most in contact with French were *least* affected by grammatical change.

The currently accepted view is that in Middle English, we have a period of extensive multilingualism and language mixture, but not creolization.

English as a Norse language

In a book published in 2014 (conveniently summarized in 2016), Emonds and Faarlund turn the conventional wisdom about borrowing in the Middle English period on its head. Middle English is traditionally understood as a continuation of Old English with rather atypical borrowings from Norse, the North Germanic language of the invading Scandinavians. These borrowings include everyday terms such as *sky*, *skirt*, *egg*, and *sister* as well as grammatical words such as *they/their/them*, *both*, and *though* and basic verbs such as *take* and *run*.

However, Emonds and Faarlund argue that Middle English is derived from Norse, not Old English, though with rather substantial lexical borrowing from Old English. (They make no mention of French borrowings, which are very extensive in Middle English.) Emonds and Faarlund argue for Norse ancestry on the basis of the grammar of Middle English, which in addition to common Germanic features shares many features with Norse, but displays, they argue, no uniquely Old English features (i.e., features

⁷ See Bailey & Maroldt (1977) and Dominique (1977). It has also been suggested that English is a creole based on the mixture of English and Norse (Poussa 1982).

found in Old English but not in Norse). Syntax is crucial, they say, for “even when massive lexical borrowing is underway, native speakers maintain their syntax” (2014: 4). Some of the features they cite include:

- prepositions (e.g., *that I argued against*),
- split infinitives (e.g., *to critically examine*),
- use of *more/most* to compare adjectives (e.g., *more/most difficult*), and
- possessive 's attached to phrases (e.g., *the student in the back row's question*).

Almost all aspects of Emonds and Faarlund's claims have been contested – often vehemently – claims ranging from the extent of Scandinavian settlement and bilingualism in northern England, to the rarity of syntactic borrowings in general, to the nature of the Middle English lexicon, and to many of the syntactic features upon which they rest their argument. It is argued that many of the syntactic features can in fact be found (sometimes in incipient form) in Old English, or inversely that some of the features they cite do not in fact exist in Norse. (See Bech and Walkden 2015 and many of the articles in the 2016 issue of *Language Dynamics and Change* for these counter-arguments). So while Emonds and Faarlund's suggestion is intriguing, it is far from proven or accepted.

We turn now from external causes of change to internal causes. The internal causes are divided into four large types:

- physiological, or mechanical,
- functional,
- psychological, or cognitive, and
- social or pragmatic.

4.2 “Mechanical” causes of change

Many types of linguistic change have a physiological basis. Sound changes, especially, may result from the mechanics of articulating sounds. In this section, we will look at a number of such changes.

4.2.1 *Conditioned versus non-conditioned change*

Sound changes fall generally into two types:

- A “**conditioned**” sound change is one that occurs in a particular context, or “(phonological) environment”. Thus, a voiced /d/ might change to a voiceless /t/ at the end of the word because the speaker is anticipating the silence that comes at the end of the word. Phonological environments may include the position of the sound in the word, the nature of the surrounding sounds, the position of stress in the word, or anything else impinging on a sound. A conditioned change is often motivated by **ease of articulation**, or an attempt on the part of speakers to make articulation easier for themselves (though the needs the hearers for perceptual clarity may counterbalance such tendencies).

- An “**unconditioned**” **sound change** is one that occurs in all contexts; all instances of a sound in the language change, leading to the loss or replacement of sounds. Unconditioned changes can involve entire classes of sound changing, or large shifts in sounds..

4.2.2 *Types of sound change*

We begin by looking at changes affecting individual sounds.

In the case of **assimilation**, a sound comes to resemble a neighboring sound either completely or partially (in terms of voicing, manner of articulation, or place of articulation).

Assimilation ⁸		
OE <i>henep</i> > ModE <i>hemp</i>	○ OE <i>wīfmann</i> > ME <i>wimman</i> (ModE <i>woman</i>)	OE <i>myln</i> > ModE <i>mill</i>

- In *henep*, following the loss of “e”, the /n/ moves to a bilabial place of articulation as the speaker anticipates the following bilabial /p/. The assimilation here is partial, in terms of place of articulation.
- In *wīfmann*, the change from the labiodental fricative /f/ to /m/ is complete assimilation in both manner of articulation and voicing.
- In *myln*, the change from /n/ to /l/ is complete assimilation in manner of articulation. Here the second of the two sounds is affected.

Another type of assimilation is the **nasalization** of vowels, in which the vowel preceding an original nasal acquires a nasal quality (i.e., air is simultaneously allowed to exit through the nose); this leads to loss of the nasal consonant, as in the change from Latin to French:

- (3) Latin *fin-* > French [fɛ̃]
 Latin *bon* > French [bɔ̃]

Assimilation may also work at a distance, where articulation is affected not by an adjacent sound, but by one in a neighboring syllable. We see this in the plural forms of some nouns in English, for example:

- (4) *gōsiz > gēs ‘geese’
 *mūsiz > mȳs ‘mice’

Here a prehistoric high front vowel /i/ in the following syllable had the effect of fronting the vowel in the preceding syllable, in this case /ō > ē/ and /ū > ȳ / (ȳ is a high front rounded vowel). Here the environment conditioning this change, the *-iz, was then lost. This is the process known as “**umlaut**”.

The process of **dissimilation** involves the differentiating of two neighboring sounds, often to make them perceptually clearer.

⁸ Here and following the symbol > means “changes to” and the symbol < means “derives from”.

Dissimilation		
marble < Old French marbre	belfry < Old French berfrei	OE þeofð > theft (þ, ð = interdental fricatives)

- In *belfry* and *marble*, where Old French had /r/ sounds in two adjacent syllables, the first /r/ was dissimilated to /l/ in English.
- In *theft*, an original sequence of two adjacent fricatives /fθ/ is made more perceptually distinct by replacing the second fricative with a stop /t/.

The **addition** or **loss of a sound** may either ease articulation or increase clarity.

Addition of a sound		
ME mumel > ModE mumble	OE kinred > kindred	OE æmtig > ModE empty
Loss of a sound		
OE andswaru > ModE answer	OE godspel > gospel	OE sōnu > ModE son

- The examples of additions involve insertion of a consonant to break up a cluster of consonant sounds that otherwise might run together (e.g., /ml/ in *mumble* and /nr/ in *kindred*). Adding a stop consonant articulated in the same place makes the sequence more distinct (/mbl/ and /ndr/).
- The examples of losses involve simplification of a consonant cluster (or group of consonants) in order to make articulation easier (/ndsw/ > /ns/ and /dsp/ > /sp/ in *answer* and *godspel*), as well loss of a final vowel (“**apocope**”) in *son*.

Vowels may also be added, as in the pronunciation of *film* as *fil[ə]m*, with an inserted schwa.

Metathesis is a process by which two adjacent sounds reverse position.

Metathesis		
ME clapse > ModE clasp	OE brid > ModE bird	ModE tornado < Spanish tornado

- Methathesis is especially common with “liquids” (/l, r/) and vowels (as in *bird* and *tornado*) or with /s/ and stop consonants (as in *clasp*).

Finally, **lenition** is a process of “weakening” of consonants when they occur between vowels.

Lenition		
OE weder > ModE weather	OE mōdor > ModE mother	OE hālgā > hallow

- *Weather* and *mother* involve a stop becoming a fricative ([d] > [ð]),
- *Hallow* involves a fricative becoming an approximant ([ɣ] > [w] – “g” represents the voiced velar fricative).

Another common type of lenition occurs when a voiceless stop becomes voiced, as we see in cases of flapping in North American dialects in words such as *matter* or *city* (/t/ > /r/). “Strengthening”, or fortition, is also possible, though less common.

4.2.3 *Changes in consonants and vowels*

In addition to the specific changes discussed in the previous section, both consonants and vowels can change in articulation in a variety of ways.

Consonants can change in voicing (for example the devoicing of /d > t/) and in place and manner of articulation.

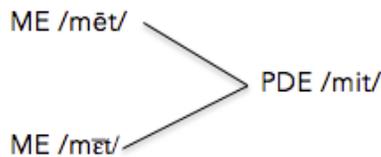
Changes in consonants		
velarization - a consonant becomes velar in place of articulation	rhotacism – an “s” becomes an “r”	fricativization – a stop becomes a fricative
e.g. the “dark” or velar “l” in <i>full</i> compared to the alveolar “l” in <i>life</i>	e.g. the difference between <i>was</i> and <i>were</i>	e.g. the difference between <i>democrat</i> and <i>democracy</i>

A particularly common type of consonant change in English is **palatalization**, in which a sound moves to the (alveolo-)palatal region from either the velar region (e.g., /k > tʃ/ as in *dike* and *ditch*) or from the alveolar region (e.g., /t > tʃ/, as in *post* and *posture*).

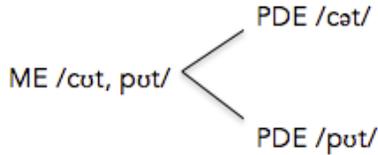
Vowels may change in their quality of articulation (in almost any possible way).

Changes in vowels			
raising /æ > e/	fronting /o > e/	unrounding /y > i/	laxing /u > ʊ/
lengthening /u > ū/	shortening /ē > e/	diphthongization /i > ai/	monophthongization /au > o/

Two sounds, typically vowels, may merge to become a single sound. Today, *meet* and *meat* have the same vowel sound, but the spelling shows us that the vowels were originally distinct in Middle English (/ē/ and /ē̄/, respectively).



A single sound may also split into two sounds. As the spelling suggests, *cut* and *put* originally had the same sound vowel /ʊ/, which then split (in most dialects) to /ə/ and /ʊ/.

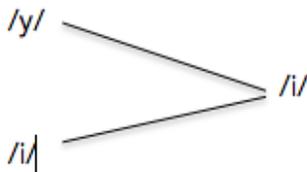


The laxing and centralization of a vowel to /ə/ is a common phenomenon called **reduction**. In the history of English, reduction of vowels in inflectional endings has had a significant effect on the grammar: originally distinct endings, such as *-an*, *-on*, *-en*, and *-um*, became *-en*, pronounced /ən/ (final /m/ changed to /n/ as well). The result was that the endings ceased to be functional .

4.2.4 Phonological change

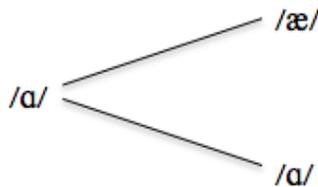
The sound changes discussed above affect individual sounds in individual words but have no effect on the overall sound system of the language. These are known as “phonetic” changes.

Sound change that lead to additions or losses to the *inventory of sounds* in a language are “phonological”. For example, if two sounds merge in all contexts, we lose a sound in the language. We see this in Middle English:



Here the Old English high front tense rounded /y/ and unrounded /i/ vowels merged as /i/, thus leading to the complete loss of /y/.

If two sounds split and create an entirely new sound, we have an addition to the inventory of sounds. This is the case in Old English:



Here an original /ɑ/ split into /æ/ and /ɑ/, with /æ/ being a new sound in the language. (Note that a split needn’t produce new sounds if the products of the split already exist in other contexts.)

An original allophone may cease to be predictable and become a phoneme. In Old English, for example, the velar nasal [ŋ] was a predictable variant of the phoneme /n/, found in the context before /k/ or /g/, as in a word such as *sing-* ‘sing’ /sɪŋg-/. A later sound change led to the loss of final /g/. This meant that /n/ and /ŋ/ could now occur in the same environment in minimal pairs such as *sing* /sɪŋ/ and *sin* /sɪn/.

4.2.5 Symmetry of phonological systems

A push towards symmetry within the phonological system may also lead to sound change.

For example, we know that Old English had fairly regular sets of paired voiced and voiceless fricatives (see Table 4).

Table 4 The fricatives of Old English

	labiodental	interdental	alveolar	alveolo-palatal	velar	glottal
voiceless	f	θ	s	ʃ	x	h
voiced	v	ð	v		ɣ	

However, there were two gaps in the system, as you can see. The gap in the alveolo-palatal region – the unpaired /ʃ/ – has been filled with the acquisition of the voiced fricative /ʒ/ by palatalization and borrowing (as discussed in section 4.1.2).

In the case of the unmatched /h/, the solution was different, namely the loss of /h/. “H-dropping” is seen very early and is still found widely in non-standard dialects (especially in England and Wales). However, it became a “stigmatized” feature in the later part of the eighteenth century, associated with uneducated and uncultured usage and therefore proscribed in the standard language. The result is that /h/ is retained and remains unpaired in the standard language.

4.2.6 Chain shifts

A large sound “shift”, or unconditioned sound change, in the Germanic languages is “**Grimm’s Law**”, or the First Sound Shift. Grimm’s Law occurred somewhere between 1000 and 400 BCE, affecting the proto- (or parent) language of English and the related Germanic languages (Swedish, Danish, German, Norwegian, Icelandic, etc.). It set them apart from all of the other Indo-European languages, which to a greater or lesser extent retain the original consonants.

In this unconditioned shift, all of the inherited stop consonants shifted in a stepwise fashion, as set out in Table 5.

Table 5. Grimm’s Law

(1) voiceless stop > voiceless fricative	(2) voiced stop > voiceless stop	(3) voiced aspirated stop > voiced fricative > voiced stop
*p > *f	*b > *p	*bh > *β > *b
*t > *θ	*d > *t	*dh > *ð > *d
*k > *x or *h (initially)	*g > *k	*gh > *ɣ > *g
*k ^w > *x ^w or *h ^w (initially)	*g ^w > *k ^w	*g ^w h > *g, *w
LLatin <i>pēs</i> - ~ English <i>foot</i>	Latin <i>cannabis</i> ~ English <i>hemp</i>	Sanskrit <i>bhrátar</i> ~ English <i>brother</i>
Latin <i>trēs</i> ~ English <i>three</i>	Latin <i>decem</i> ~ English <i>ten</i>	Sanskrit <i>ádharma</i> ~ English <i>under</i>
Latin <i>lūc-</i> ~ Old English <i>lēoht</i>	Latin <i>genu</i> ~ English <i>knee</i>	Latin <i>homō</i> ~ English <i>guma</i>

We see its effects of this shift in the cognate sets listed in Table 5, such as Latin *decem* and English *ten* (*decimal* and *decade* are later borrowings into English from Latin and hence show the Latin consonant /d/).

Scholars debate about the reasons for the change and the order of the changes, but one widely accepted view is that Grimm’s Law was a “drag chain”, in which the first set of changes (*p > *f, *t > *θ, *k > *x) created gaps where the original sounds occurred; in the second step, *b, *d, and *g were “dragged” into these gaps, changing to *p, *t, and *k, and a similar drag process took place in the third step. Drag chains typically occur in the case of consonant shifts, while the opposite process, push chains, are more common in the case of vowel shifts.

4.2.7 Word order change

Another type of change that may be considered more or less mechanical is “typologically” motivated word order change.

The basic word order of a language is determined by the position of the subject (S), the verb (V), and the object (O). In regard to these elements, most languages of the world fall into three types:

- SVO – e.g., English, French, Finnish, Thai, Swahili
- SOV – e.g., Japanese, Turkish, Basque, Latin, Bengali
- VSO – e.g., Irish, Egyptian, biblical Hebrew, Salish

The other orders (VOS, OSV, OVS) are found only very rarely, if at all.

Certain other aspects of word order seem to correlate with these basic types (called **typological word order**). For example in an OV language as opposed to a VO language:

- (5) the auxiliary follows the main verb: *see will*
- (6) postpositions rather than prepositions occur: *the house in*
- (7) the adjective modifier precedes the noun: *expensive coat*
- (8) the genitive modifier precedes the noun: *of the dog leg, the dog’s leg*

Languages may be “typologically inconsistent”, showing not all of the features which correlate with their basic order.

The basic word order of a language can change over time, though this takes millennia; as the order of S, V, and O change, so do the order of the associated features. Chinese has changed from a SVO to a SOV language, though it is not yet entirely consistent. In contrast, we have evidence that Germanic was a SOV language, with the change in the direction of SVO. The earliest inscription of Germanic is SOV. And we find remnants in Old English of the earlier SOV order, as exemplified in Table 6.

Table 6 Remnants of (S)OV order in Old English

Word order pattern	Example from Old English
SOV	<i>he forhæfednysse lufode</i> ‘he loved temperance’ <i>gif wē ðā stilnesse habbað</i> ‘if we have peace’
Verb – Auxiliary	<i>gifan willað</i> ‘(he/she) will give’
Genitive – Noun	<i>þæs landes scēawunge</i> ‘(for) a surveying of the

	land'
Noun – Postposition	<i>Scedelandum in</i> 'in Scandinavia'

Modern English is still not entirely consistent in its word order since it has two OV rather than VO correlated features:

- (9) the adjective precedes the noun: *the blue sky* not *the sky blue*
- (10) the inflected genitive precedes the noun: *book's cost* not *the cost book's*
(but compare *the cost of the book*, which is typologically consistent)

Modern German, like Old English, still uses verb final (SOV) order in subordinate clauses.

What makes these changes “mechanical” is that a number of different constructions all apparently work together to change in a particular direction (i.e. drift).

4.3 Functional causes of change

Both lexical change and semantic change occur in large part because of the expressive needs of speakers. Some types of grammatical change may also be functionally motivated.

4.3.1 *Lexical change*

Lexical change involves the creation of new vocabulary by lexicalization or processes of word formation internal to the language, such as compounding or derivation, or by the borrowing of words from other languages.

Speakers require new vocabulary in order to respond to new communicative situations, to react to social, cultural, and political realities, to name new experiences and phenomena, to adapt to technological changes, and even just to find novel and more expressive ways to communicate. The word stock of a language is never static. Not only are words added to the language, they may also be lost or replaced.

Oxford English Dictionary

The monumental *Oxford English Dictionary*, or OED, is a record of changes in the English vocabulary, including both additions (indicated by the date of their first known recorded use) and also losses (words marked as archaic or obsolete). For example, in the entry for the word *mouse*, we find – after the expected definition of ‘small rodent of the family Muridae’ – a number of old and new uses of the word:

†11. A match used in firing a mine or a gun. *Obsolete.*

Thesaurus >
Categories >

- 1867 W. H. SMYTH & E. BELCHER *Sailor's Word-bk.* *Mouse*,...a match used in firing a mine.
1875 E. H. KNIGHT *Pract. Dict. Mech.* *Mouse*,...2. (*Blasting*) A match used in firing guns or mines.

(Hide quotations)

12. *Criminals' slang.* An informer.

Thesaurus >
Categories >

- 1890 N. GOULD *With Tide* xxx, in *Referee* (Sydney) 19 Feb. 7/4 'He's turned mouse, has he?'. 'What's up now?'. 'He's turned us over.'
1934 J. NORTH *New Masses* 3 Apr. 10/2 To the epithet 'Rat!' or 'Mouse!' or 'Weasel!' the scab finds his car doorless or even in flames.
1981 P. SANN *Trial in Upper Room* 187 I don't want that mouse any deader than he was when he got here.

(Hide quotations)

13. *Computing.* A small hand-held device which is moved over a flat surface to produce a corresponding movement of a pointer on a monitor screen or to delimit an area of the screen, and which usually has fingertip controls to select or initiate a computer function, or to place a cursor at the pointer's position.

Thesaurus >
Categories >

Douglas C. Engelbart, generally regarded as the inventor of the mouse, patented such a device in 1970 (*U.S. Patent 3,541,541*, filed 21 June 1967), while he was based at the Augmentation Research Center of the Stanford Research Institute. The word 'mouse' is not used in the patent; the device is there called a 'position indicator control' or just an 'indicator control'. W. K. English was one of Engelbart's team at the Center.

- 1965 W. K. ENGLISH et al. *Computer-aided Display Control: Final Rep.* (Stanford Res. Inst.) 6 Within comfortable reach of the user's right hand is a device called the 'mouse' which we developed for evaluation...as a means for selecting those displayed text entities upon which the commands are to operate.
1967 R. H. STOTZ & T. B. CHEEK *Low-cost Graphic Display for Computer Time-sharing Console* 13 Its position [sc. the cursor's] on the display screen is controlled by means of a hand-held box that is moved about on a surface. This box, similar to a device called the 'mouse' by its developers at Stanford Research Institute, has two potentiometers.
1977 *Sci. Amer.* Sept. 234/2 The user makes his primary input through a typewriterlike keyboard and a pointing device called a mouse, which controls the position of an arrow on the screen as it is pushed about on the table beside the display.
1982 *N.Y. Times* 26 Nov. D1 Instead of typing commands or code words to request information, users can point to words or symbols on the screen...through manipulation of a hand-held device known as a mouse.
1997 'Q' *Deadmeat* 13 I could see people inside clicking on mouses and tapping keyboards.

(Hide quotations)

Meaning 11 seems to have been used for only a short period in the late nineteenth century; technological advances in armaments probably led to the loss of this meaning. Meaning 12 seems to be still possible, though the more usual word for this meaning now is *rat*. We are all familiar with meaning 13, and the OED tells us that this first appeared in print in 1965.

Intensifiers are an interesting case of creation and replacement. These are words such as *very* or *quite* which express the degree or intensity of a quality or action (e.g., *I quite like this option, I am very happy with this*). As *quite* and *very* (both of which date back Middle English) came to have less impact, they were replaced by new forms:⁹

- (11) a. These **outrageously** expensive sheets were better than other sheets. (*outrageously* is first recorded as an intensifier in 1749).
b. She's been **awfully** busy since high school (first recorded as an intensifier in 1816).
c. Oma went on to run ... a **fabulously** succesful bridal gown design shop (first recorded as an intensifier in 1845).
d. The operating system is **incredibly** complex ... (probably first used as an intensifier post 1900).

⁹ The examples below are taken from the *Corpus of Contemporary American English* (COCA) (Davies 2008–). All are from fiction published in the twenty-first century.

Interestingly, it is *so* (as in *that is so stupid*), dating back to Old English times, and the more recent *really* (as in *I'm really happy*) that are currently the preferred intensifiers among younger speakers.

English has always been open to replacing and renewing its vocabulary through borrowing. Of the one thousand most commonly used words in Old English poetry, only 55% remain in the language.¹⁰ The massive influx of French vocabulary in the Middle English period fundamentally altered the nature of the English vocabulary. A tally of the *Shorter Oxford English Dictionary* (containing about 80,000 words) shows that only 22% are of Germanic origin and fully 57% are of French or Latin origin. This represents a dramatic change! Even so, the “core” vocabulary of English, which contains function words (such as prepositions, articles, and pronouns), basic verbs (*go, do, see*), and basic nouns (such as kinship terms or color terms), remains fundamentally Germanic. The so-called “General Services List”, the most important words for second-language learners, contains 47% Germanic and 48% French and Latin vocabulary.¹¹

Some borrowings and word creations never take hold, however, and are quickly lost. A quite virulent debate raged in the Early Modern English period over Latinate borrowings, many of which (derisively termed “inkhorn terms”) did not find acceptance among speakers: *fatigate* ‘make tired’, *eximious* ‘excellent’, and *adjuvate* ‘aid,’ to name a few. The same fate may well await many of the vocabulary items arising in today’s internet and texting language.

Not all lexical replacement is easily understood. Why would a speaker of English give up the perfectly good verb *niman* meaning ‘take’ and adopt the Old Norse form *taka*? Why does the Latin borrowing *impede* take hold, while the form *expede* gains no traction? In cases such as these we often need to consider sociolinguistic factors (see Section 4.5.1) such as prestige and stigmatization, in-group usage, and standardization.

4.3.2 Semantic change

Change in meaning, or semantic change, can be the result of a variety of different processes: a word may acquire a wider meaning (**generalization**), a narrower meaning (**specialization**), a more negative meaning (**pejoration**), a more positive meaning (**amelioration**), a weaker meaning, or a stronger meaning, as exemplified in Table 7.

Table 7 Types of semantic change

Type of sound change	Word	Earlier meaning	Current meaning
generalization	<i>slogan</i>	‘a war cry (employed by Scottish highlanders)’	‘a motto or distinctive phrase (of a political party or other group)’
specialization	<i>minister</i>	‘a person acting under the authority of another’	‘a member of the clergy (acting under the authority of God)’
pejoration	<i>accident</i>	‘a chance or unexpected	‘an unfortunate event, a

¹⁰ See Cassidy & Ringler (1971: 4).

¹¹ The figures from the *Shorter Oxford Dictionary* and “General Services List” are taken from Lutz (2002: 147).

amelioration	<i>dogged</i>	event' 'malicious, spiteful, ill-tempered'	mishap, a disaster' 'persistence, tenacity, resoluteness'
weakening	<i>naughty</i>	'morally bad, wicked, immoral'	'mischievous, disobedient'
strengthening	<i>molest</i>	'to cause trouble or vexation'	'to interfere with injuriously, often sexually'

Some types of semantic change clearly respond to cultural changes, as in the meaning of *pen*, still denoting an instrument for writing with ink, but now referring to fountain pens, ballpoint pens, felt-tip pens, gel pens, and computer styluses—in addition to traditional quills dipped in ink.

Other types of semantic changes have less to do with 'need' than with the pervasiveness of figurative thinking. In section 4.4.3 we will look at two such processes, metaphor and metonymy, which lead to semantic change.

4.3.3 *Loss of English whom*

The regularization and repair of morphological and syntactic systems, sometimes called **therapeutic change**, often have the effect of making the overall grammar more systematic. One such change involves the decline of the word *whom*, which is traditionally used for a non-subject in questions and relative clauses.

- (12) Question pattern:
- Subject: Who saw Mary?
 - Non-subject: Whom did Mary see?
- (13) Relative clause pattern:
- Subject: The man [who saw Mary]
 - Direct object: The man [whom Mary saw]

The *who-whom* contrast is unique among *wh* words: there is nothing comparable for *what* or *which*. Moreover, *whom* in questions and relatives occupies the position before the verb normally occupied by subject forms such as *who*. Dropping *whom* would therefore eliminate a puzzling irregularity. In fact, Edward Sapir in his classic book *Language* published in 1921 predicted that *whom* would disappear “within a couple hundred years” (156). And most speakers today would use *who* in all of the cases shown above.

While the word is clearly falling out of use as a direct object, its ultimate fate remains uncertain as it continues to be occur in the position following a preposition—although not when it is separated from the preposition.¹²

- (14) Adjacent to a preposition: To whom did you talk to. (not: To who did you talk?)

¹² Some speakers accept *To who did you talk?*

- (15) Separated from the preposition: Who did you talk to. (not: Whom did you talk to?)

4.3.4 Regularization of English strong verbs

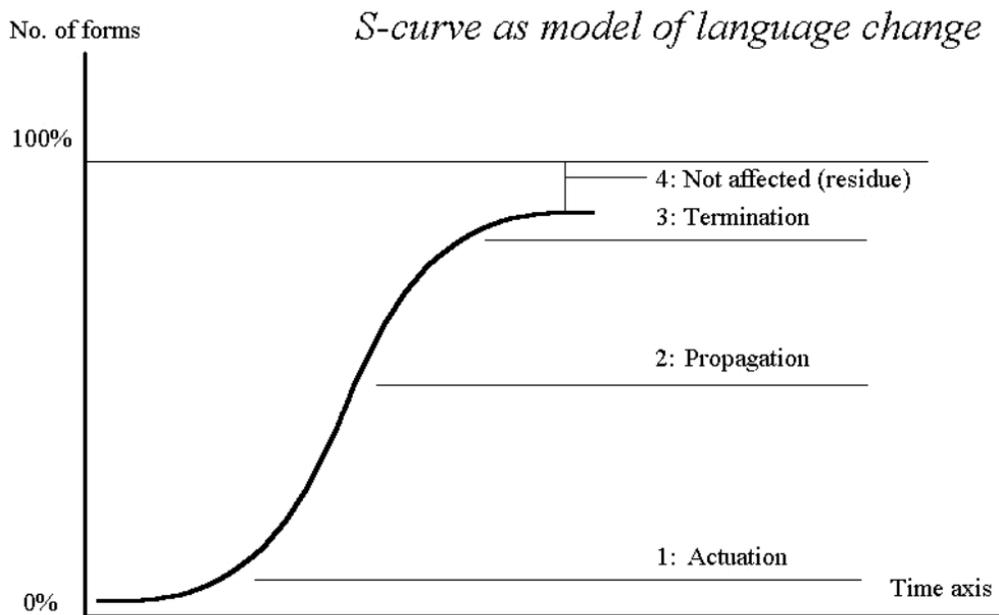
Another example of therapeutic change involves the conversion of so-called **strong verbs**, which form their past tense with a vowel change (e.g., *sing/sang*), into **weak verbs**, which form their past tense with the *-ed* suffix (e.g., *laugh/laughed*). Strong verbs are generally considered to be “irregular” in Modern English since the vowel changes look quite random (compare *write ~ wrote*, *bite ~ bit*).

In Old English the strong verbs showed regular patterns of vowel alternation (an ancient process called **ablaut**) and fell into seven regular classes. Over time, many strong verbs began to form their past tense (by analogy, see below) with the more common *-ed* suffix:

- (16) a. OE *help-*(present) ~ *halp* (past) > ModE *help* (present) ~ *helped* (past)
 b. OE *bac-* (present) ~ *bōc* (past) > ModE *bake* (present) ~ *baked* (past)

Verbs borrowed from French and other languages formed their past tense this way as well (e.g., *perceive/perceived*, *suffer/suffered*), further reinforcing this pattern.

Nonetheless, not all strong verbs have been regularized; by one count there are still 78 such verbs in Present-day English, compared to 367 in Old English.¹³ One factor contributing to their preservation is the frequency of these common strong verbs (see the Language Matters box below). But the continuing existence of “irregularities” is also completely in line with other types of change, which never go to completion. As illustrated in Figure 1., change often follows an **S-curve**, beginning slowly (“actuation”) and then picking up speed (“propagation”), but ending before all forms are affected.



¹³ See Branchaw (2010).

Figure 1 S-curve model of language change (taken from Hickey 2017:30)

The half-life of strong verbs

A study of the loss of strong verbs in English by a group of evolutionary biologists (Lieberman et al. 2007) argues that it is possible to determine the rate at which strong verbs regularize based on their frequency alone: irregular verbs regularize at a rate that is inversely proportional to the square root of their usage frequency (in Modern English). Verbs like *bide* or *chide* have a “half-life” of 300 years, verbs like *fly* and *shrink* have a “half-life” of 2000 years, and verbs like *come*, *be*, or *have* might be estimated to have a “half-life” of 14,400 years. The authors even suggest that the next verb to regularize will be *wed*. While linguists have found much to object to in this work, it remains an intriguing question whether we can predict the rate of conversion and whether, given a long enough time period, we might expect all irregular verbs to become regular.¹⁴

4.3.5 Grammaticalization

Grammaticalization is a process in which a word or phrase comes to be used as a marker of a grammatical contrast, such as tense or case. This process often involves a change in form (from full to reduced form of the word) and/or a change in status (from independent word to function word or inflection).

For example, the intensifier *very* derives from the borrowed French word meaning ‘true, truly’; it has come to function as an intensifier meaning ‘in a high degree, extremely’, as in *very tired* or *very quickly*. This occurred in steps in Middle English:

- (17) a. he was a verray parfit gentil knyght
‘he was a true perfect gentle knight’
- b. he shal be verray penitent
‘he will be truly penitent’ or ‘he will be very penitent’
- c. My hede is very heuy
‘my head is very heavy’

In (17a), *very* clearly has its full meaning of ‘truly’, but in (17b) it can be ambiguous between the meaning of ‘truly’ and a weakened meaning of ‘very’; finally in (17c) it is clearly an intensifier meaning ‘very, extremely’

French followed a different pattern of grammaticalization in its creation of a future tense marker. In Modern French, the future is denoted by the inflection *-erai*, as in *chanterai* ‘I will sing’. Where did this inflection come from? We know that it was possible in later Latin to have a construction with the verb *habere* ‘have’ and the ‘infinitive’ form of a lexical verb, creating a pattern with the approximate meaning ‘I have to X’, as in:

- (18) Latin canticum habeo cantare > French chanterai la chanson

¹⁴ For example, criticisms include the use of Modern English as an indicator of frequency of verbs in older English, the ignoring of phonological shape and distinctiveness of the root vowels as a motivating force, the inclusion of all types of irregular forms, not just strong verbs, among the set studied, and so on.

‘the song I have to sing’ > ‘I will sing the song’

With a change in word order (*habeo* following *cantare*), *habeo* became reduced and attached to the preceding verb. Again the change from obligation to futurity is an easy step.

Other examples of grammaticalization are given in Table 8.

- The full prepositions in Latin (*ad, de*) become grammatical markers of case in French; the French forms have lost their locative meaning of direction and their full word status, often fusing with the definite article *le* to give *au* and *du*.
- The full noun *mens* in Latin becomes an adverbial suffix *-ment* in French. For example, the Latin noun phrase *clare mente* ‘in a clear spirit’ becomes the French adverb *clairment* ‘clearly’.
- The noun *hwīl* in Old English grammaticalizes as the conjunction *while* ‘during, although’ in Modern English (note it can still function as a noun, as in *a little while*).
- The preposition *tō* becomes a marker of the infinitive, as in *to run* (again it continues to function as a preposition, as in *go to school*).
- The adverbs *more* and *most* grammaticalize as markers of comparative and superlative degree, as in *more/most difficult*, though the inflections of degree are still used, as in *smarter/smarter*.

Table 8 Examples of grammaticalization

Source form	Original meaning	Grammaticalized form	Grammatical meaning
Latin <i>ad</i>	'to, toward'	French <i>à</i>	marker of dative case
Latin <i>de</i>	'from, away from'	French <i>de</i>	marker of genitive case
Latin <i>pendente</i>	'weighing, pondering, considering' (present participle)	French <i>pendant</i>	'during' (preposition)
Latin <i>mens</i>	'mind, spirit' (noun)	French <i>-ment</i>	adverbial suffix
OE <i>hwīl</i> <i>þa hwīle þa</i>	'a period of time (noun) 'at the time that' (prepositional phrase)	ModE <i>while</i>	temporal or concessive conjunction
OE <i>tō</i>	'to, towards' (preposition)	ModE <i>to</i>	marker of the infinitive
OE <i>māra, mǣst</i>	'more, most' (adverbs)	ModE <i>more, most</i>	markers of the comparative/superlative degree (cf. <i>-er, -est</i>)

4.4 Psychological or cognitive causes of change

In psycholinguistics, the same cognitive processes that shape many types of human behavior are seen to be at work in language production and processing, as well as in language use and change. Here we consider a number of these cognitive processes: analogy, reanalysis, metaphor, metonymy, and inference.

4.4.1 Analogy

Analogy involves the perception of similarities between entities. In language, analogy depends upon seeing similarities of form and/or meaning between words or structures or the recognition of common patterns.

In analogical change, one form is changed to be more like another form with which it is seen to be similar or analogous. This can be stated in terms of an “analogical proportion”:

(19) *box : boxes :: mouse : ?*

This is read “box is to boxes as mouse is to X”. While we know that normal plural of *mouse* is *mice*, if we were to “analogize” (‘make regular’) this plural, it would be

mouses.¹⁵ *Box/boxes* is chosen as the basis for this analogy because the language user recognizes *-es* [əz] as the most common, or regular, means of forming plurals for nouns ending in sibilant sounds (e.g., *bush/bushes*, *maze/mazes*, *fence/fences*, etc.)

Analogy is the motivating force behind many changes in language. Table 9 shows the regularization of the past tense in the English verb in English.

Table 9 Analogical change in past tense verbs in English

OE present tense	OE past tense	OE past tense marker	ModE past tense	ModE past tense marker
dinn- ^a	dined-	-ed	dinned	-ed
luf-	lufod-	-od	loved	-ed
bærn-	bærnd-	-d	burned	-ed
cyss-	cyst-	-t	kissed	-ed
lūc-	lēac-/luc-	ū > ēa/u	locked	-ed
glīd-	glād-/glid	ī > ā/i	glided	-ed
wad-	wōd-	a > ō	waded	-ed
help-	healp-/hulp	e > ea/u	helped	-ed

^a The hyphen indicates that an ending for person and number follows.

As discussed earlier, Old English had weak and strong verbs. Weak verbs were the most frequent type of verb and formed their past tense with a “dental suffix” (*-ed*, *-od*, *-d*, *-t*). In Modern English, the dental suffix is written as *-ed*, but pronounced differently depending on the final sound of the verb:

- (20) [d] as in *loved*, *played*
 [əd] as in *waded*, *hated*
 [t] as in *helped*, *raked*

Strong verbs in Old English included some very common verbs and formed their past tense with a vowel change of the root. Because *-ed* was the most frequent pattern, it came over time to serve as the model for analogizing the less common verbs, as in:

- (21) love : loved :: wade : ?

Here the regular form *waded* replaced the inherited *wōd*. Of course, there are verbs that have resisted analogical change, e.g., *have/had*, *seek/sought*, *cut/cut*, *drive/drove*, *choose/chose*, *grow/grew*. Some verbs still show variation between weak and strong endings, such as *hang/hanged* ~ *hung*, *dive/dived* ~ *dove*.

Analogy may also motivate a change called (somewhat patronizingly) **folk etymology**. Here a word (or part of a word) has become unfamiliar because it has been lost or it is a foreign word. Based on its similarity to an existing word in the language, the speaker changes its form and gives it a new history (or etymology).

¹⁵ In fact, *mouses* is the most common plural used when speaking of the computer implement rather than the small rodent.

(22) OE *ang* ‘painful’ + *nægl* ‘nail’ > ModE *hang* + *nail*

The word *ang* was lost over time (but note its continued existence in the cognate German borrowing *angst*). The speaker – sensing the similarity of *ang* to the existing word *hang* – provides the word with a new form, *hangnail*, and a new meaning. No longer is it a ‘fingernail that causes pain’, but rather ‘a (small piece of) fingernail that “hangs” off the edge of the nail’. Table 10 provides more examples of folk etymologies.

Table 10 Examples of folk etymologies

nightmare	from	OE <i>niht</i> ‘night’ + <i>mære</i> ‘spirit’	nothing to do with “mare”, ‘female horse’
stirrup	from	OE <i>stig</i> ‘climbing’ + <i>rāp</i> ‘rope’	nothing to do with “up”
sockeye	from	Salish <i>sukkegh</i>	nothing to do with “sock” or “eye”
woodchuck	from	Cree <i>wuchak</i>	nothing to do with “wood” or “chuck”
mistletoe	from	OE <i>mistle</i> ‘birdlime’ + <i>tān</i> ‘twig’	nothing to do with “toe”
scotfree	from	OE <i>sceot</i> ‘paying’ + <i>free</i>	nothing to do with “Scots”

4.4.2 Reanalysis

Reanalysis occurs when a hearer assigns an utterance a different (but compatible) structure from the one used by the speaker. For example, the word *alcoholic* consists of a root *alcohol* plus the suffix *-ic*.¹⁶ The language user might (mistakenly) reanalyze the word as *alc* + *oholic* and then produce the productive unit *-oholic*:

(23) *alcohol-ic* restructured as *alc-oholic*
 leading to *chocoholic*, *workaholic*, *golfaholic*, etc.

A much discussed example of syntactic reanalysis is involved in the grammaticalization of *be going to*’s *gonna* as a future form.¹⁷ This form originated in a construction consisting of a motion verb (*go*) and a purpose clause (*to V*):

(24) [He] [is going] [to open the door]

Here “is going” is the progressive of the verb *go* and indicates that the subject is moving or travelling, and “to open the door” expresses the purpose of his movement; thus, the sentence means ‘He is moving for the purpose of opening the door’. However, a language learner (a child) or other hearer might analyze the structure differently, namely:

(25) [He] [is going to] [open the door]

¹⁶ Alternatively, it might be possible to analyze the word as *al-cohol-ic*, since *al-* is a prefixed article in Arabic (the source language), though this is not what English speakers seem to have done.

¹⁷ See Hopper & Traugott (2003: 2–3).

In this analysis “is going to” is interpreted as a unit meaning ‘immediate future’ (rather than progressive); “open the door” is the complement and no longer expresses purpose. We recognize that such a reanalysis has occurred when *be going to* begins to occur with verbs that are incompatible with the idea of literal movement, as is the case with *like* in

(26) [He] [is going to] [like this book]

Once the reanalysis has occurred, the new unit can be reduced to *'s gonna*. *He's gonna open the door* can only be interpreted with the ‘future’ meaning, not the motion meaning.

“**Complex prepositions**” such as *ahead of, due to, aside from, in view of, by way of, as far as* also involve reanalysis. For example the adjective *near* is followed by a prepositional phrase complement as in

(27) [The cat] is [near] [to the fireplace]

This may be reanalyzed as a complex preposition *near to*, with the noun phrase complement *the fireplace*

(28) [The cat] is [near to] [the fireplace]

While this rebracketing is invisible, it becomes obvious when *near to* further grammaticalizes as a degree adverb, as in *The task is near to impossible* or *The team is near to defeated*.

4.4.3 Metaphor and metonymy

Metaphor is a cognitive process involving the transfer of meaning from one conceptual domain to another conceptual domain with which it is in some way analogous. We understand one thing (usually a more abstract thing) in terms of another (usually a more concrete thing).

(29) *grasp* ‘to clutch or grip in one’s hands’ > *grasp (a point)* ‘to comprehend, understand’

Because we can see and feel something by taking it in our hands, we metaphorically extend the verb *grasp* from the physical to the mental domain, to the action of taking hold of something with one’s mind.

In the case of **metonymy**, an entity is named by substituting a word denoting a property or thing associated with that entity. Thus, the period before and after work, in which there is an increased volume of traffic and which hence has the property of ‘rushing’, is called *rush hour*.

Other examples of metaphor and metonymy in lexical semantic change are given in Table 11. Note that semantic change depends on the metaphor or metonymy “dying” and the new meaning becoming part of the conventionalized meaning of the word.

Table 11 Metaphor and metonymy in lexical semantic change

Word	Literal meaning	Figurative meaning
a. Metaphor		
coat	'outer garment'	'layer (of paint)'
root	'underground part of a plant'	'source, origin, cause'
polite	'smooth, polished'	'refined, cultured'
nitpick	'pick out lice eggs'	'to criticize overzealously or pedantically'
b. Metonymy		
press	'printing press'	'journalists, collectively'
suit	'set of jacket and trousers for office or formal use'	'business executive'
church	'building used for religious worship'	'religion'
runner	'a person who runs'	'athletic-type shoes'
barbeque	'grill or pit for cooking food'	'social gathering featuring grilled food'

Metaphor is also seen in grammatical words. The **modal auxiliaries** in Modern English express both “deontic” and “epistemic” meanings (see Table 12):

- **Deontic meaning** is a matter of action, i.e. obligation, intention, responsibility, permission, duty, and command.
- **Epistemic meaning** is a matter of belief, i.e. potentiality, probability, prediction, and certainty.

Table 12 Deontic and epistemic meanings of English modals¹⁸

Modal	Deontic meaning	Epistemic meaning
must	I must show papers to prove that it did not come from the Brazilian rainforest. (= 'I am obliged to do X)	Harry must get his talent for gardening and landscaping from you. (= "It is very likely/I think that X)
should	Perhaps she should move to California, too. (=There are reasons for her to do X)	Her matter-of-fact tone should encourage him. (= I think it will X)
may	You may paint and decorate your apartment in any way you like. (=You are allowed to do X)	You may have noticed that our spies are very good. (It is possible that X)

The history of English shows us that deontic meaning preceded epistemic meaning in individual modal auxiliaries. This change from deontic > epistemic involves a

¹⁸ Examples in this and the next table are taken from the COCA. All are from fiction published in 2017.

metaphorical transfer of meaning from forces in the world to forces in the mind. Thus, while deontic *must* means that there are forces in the world that compel action, for epistemic *must* it is forces in the mental world that lead one to come to some conclusion. In contrast, *may* refers to the lack of barriers in the physical or mental worlds.¹⁹

4.4.4 *Invited inference*

Invited inferences are conclusions that hearers draw (are invited to draw) from a speaker's utterance. These occur "on the fly" in the midst of conversations. But if they become a part of the conventionalized meaning of a word, semantic change has occurred.

The word *sibban* 'since' in Old English had purely temporal meaning 'then, thereupon'. Certain contexts may allow an inference of causality 'because' and are ambiguous between temporal and causal meaning. Finally, other contexts allow only a causal interpretation. When the meaning of causality is the only meaning allowed in context (in the 16th century, according to the OED), we can say that semantic change has occurred. The historical sequence is shown in Table 13 using Modern English examples.

Table 13 Invited inferences in *since*

Step 1: temporal meaning	Since the last time I saw you, you've become distinctly more extraordinary. I'd known him since I was two years old.
Step 2: ambiguous meaning	She'd grown closer to her friends on the faculty since her fertility drama. Since her separation from Paul, Julie had come to know a lot of single, career-oriented mothers.
Step 3: causal meaning	Since it was just the two of us, we would spend hours in practice. Since we have official visitors this afternoon, I'm not quite as amused.

4.5 Social and pragmatic causes of change

4.5.1 *Historical sociolinguistics*

Extralinguistic factors, including socioeconomic class (social rank/status), sex and gender, age, and group membership (social networks and communities), can have significant effects on the forms of language chosen and how they function in the present-day. We always have a choice of variant forms, or "variables", to use whether in

- phonology – e.g., the pronunciation of *-ing* as [ɪn] or [ɪŋ] or the use (or not) of rising intonation at the end of declarative sentences ("uptalk");
- grammar – e.g., the expression of deontic necessity with *have to* or *must* or *got to/gotta*, intensification by means of *so*, *really*, or *very*, or negation with one or more negatives, as in *I don't want any/no trouble*; or
- lexis – e.g., saying *I'm shaken* or *I'm shook* when expressing surprise, shock upset or calling a non-alcoholic drink *pop*, *soda*, or *soft drink*.

¹⁹ See Sweetser (1990).

- pragmatics – e.g., use (or not) of the discourse marker *like* in *I am (like) really smart*.

Since these variant forms serve the same function, the choice of one over another is largely determined by the speaker’s social characteristics of age, gender, or class

Sociolinguists carry out “**apparent-time** studies” in which they show that differing uses of forms among speakers of various ages correlates with ongoing changes in language. That is, if younger speakers are found to have a high use of a form (e.g., of *have to* or *so* and *really*) and older speakers of the language a much lower use of the form (e.g., using *must* or *very* in the same contexts), it is assumed that the younger speakers’ form is the innovative or incoming one. As young speakers age, they will continue using these forms and ultimately the other forms will be displaced.

Change does not occur in all instances, however. Sometimes the variable is age-related and may be abandoned over time, e.g. the discourse marker *like* or uptalk, both associated with young speakers. Or the variant may continue to exist and be stable over time, e.g., the use [ɪn] or [ɪŋ] for *-ing*.

“Historical sociolinguists” use many of the same methods as sociolinguists to study change in “**real-time**”, considering how social factors have led to historical changes in the language. This type of study poses considerable difficulties:

- Written documents of the past often provide no or few clues to the social characteristics of the writers, except perhaps gender (and until relatively recently documents by women writers were not common).
- Language change begins in oral, interpersonal interactions, and social factors are most in play during face-to-face conversations. But examples of oral, colloquial speech are not available before the advent of the tape recorder. Nonetheless, we getting more access to “speech-like” data such as court records, depositions, and trial proceedings, as well as represented speech in drama and fiction, and more colloquial forms of writing such as personal letters. See the Language Matters box below.

The Proceedings of the Old Bailey

This is an online repository of all of the records of London’s central criminal court from 1674 to 1913 (<https://www.oldbaileyonline.org>). It contains an impressive record of the speech of common people in earlier periods of English, often engaged in back and forth conversation. In the following extract, a Thames police officer testifies, in quite colloquial speech, at the trial of a man accused of stealing a jacket. The trial was held January 6, 1831 (trial of John Burke, theft; simply larceny t1831010677)

ALEXANDER LAKE. I am a Thames Police-officer. I went with Steel to look for his jacket; there is a baggage warehouse shed—I saw the prisoner by the side of that shed; he pulled off this jacket—I asked him how he came to take it; he said it was an old one kicking about, and he did not think there was any harm in it—I then asked him about another article, which the prosecutor had lost; he said if I would go with him, he would show me—he showed me a red shirt, but the prosecutor said that was not his; there were six or seven other persons about the prisoner when he was taken; I have known him nine or ten years—he has been a hard working industrious man.

Prisoner. I took the jacket, but nothing else.

GUILTY. Aged 34.—Confined Six Months.

4.5.2 *Social causes of change: you and thou*

Perhaps one of the most studied examples of sociohistorical change is the replacement of *thou* by *you* in the history of English. In Old English, *thou* was the singular second person pronoun and *you* the plural. In Middle English, probably under French influence, the plural form began function as an “honorific”, used to address superiors in age, rank and social class. But a complex set of factors came to determine the use of the two forms in Early Modern English, including additional factors such as the public/private context of the discourse, the formality/informality of the discourse, text type and above all, emotional relations between interlocutors (*you* for respect and admiration and *thou* for contempt and scorn). Switches between forms could record changing attitudes within conversations; look at the following examples from Shakespeare.²⁰

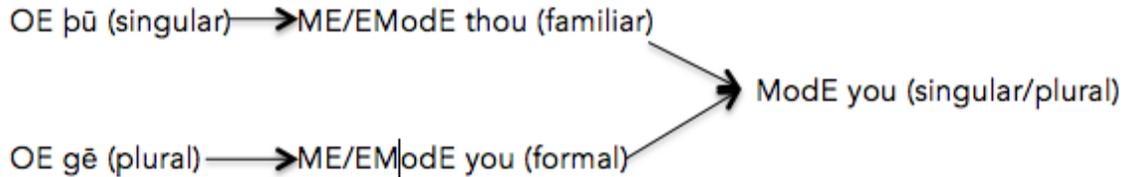
- (30) a. Hamlet: Goe **thy** ways to a nunnery. Where’s **your** Father? (*Hamlet* III.i)
 b. Palamon: **You** shall not love at all ... **Thou** art a Traytour [traitor] *Arcite*
 ...
Arcite: Why are **you** mov’d thus? (*The Two Noble Kinsmen* II.ii)

In (30a) Hamlet begins by addressing his lover Ophelia with the intimate “thy”, but then as he becomes suspicious of her actions, he switches to the distant and cold “your”. In (30b), the noble cousins, Palamon and Arcite, begin by using the formal “you”, as was

²⁰ For more examples and further discussion, see Crystal & Crystal (2002: 450–451).

common in the upper classes. But as Palamon argues with Arcite over their common love for Emilia, he switches to the informal “thou”, which would be insulting. Finally, Arcite attempts to make peace by using the formal and more polite “you”.

The change may be represented as follows:



See the Language Matters box for further discussion of the *thou/you* phenomenon.

T/V forms

The honorific use of second person pronoun forms (originally singular and plural and then familiar and formal) is often designated by the consonants which begin the forms in Latin, *tu* and *vos*, hence T/V. This distinction continues to be made in most of the Romance languages (French, Spanish, Italian, Portuguese, Romanian). In the Germanic languages, it still holds in German, Dutch, and Yiddish, but is increasingly uncommon in Danish, Norwegian, Swedish, and Icelandic. The same type of distinction is found in other branches of Indo-European, e.g. Slavic (Russian), Baltic (Latvian), Indic (Hindi), Celtic (Welsh), as well as in many non-Indo-European languages.

In English, by about 1700, *you* had replaced *thou* in the standard (with *thou* preserved only in regional dialects, certain religious groups, and some liturgical writing). Why did English abandon the system of honorifics at such an early date? Historical sociolinguists have determined that lower-class speakers began to emulate upper-class speakers in using *you*, which was associated with polite usage. *Thou* continued to be used for a period for positive or negative emotion (social superiority, intimacy among the lower classes). But it eventually came to be seen as impolite, was stigmatized and ultimately abandoned. This is known as a “change from above” as it is a usage of the upper classes that is adopted by the lower classes (the reverse can also happen). In contrast to the findings of many contemporary sociolinguistic studies, where women are in the vanguard of change, it does not appear that women were the promoters of this change.

4.5.3 Historical pragmatics

The study of language in use – pragmatics – focuses on the variety of contextual features that shape the forms of language and discourse we use, including

- the communicative intentions of the speaker,

- the underlying beliefs and assumptions of the speaker and hearer,
- the given or new nature of the information expressed,
- the informality or formality of the discourse,
- the structure of the discourse,
- the genre or medium of language used, and
- principles of (im)politeness in effect in the society.

In parallel with “historical sociolinguistics”, the new subfield of “historical pragmatics” is concerned with how pragmatic factors affect and motivate language change. Historical pragmatics may focus on:

- pragmatic forms and functions in earlier stages of a language (such as the use of address terms in Early Modern English),
- changes in pragmatic forms and functions over time (such as the changes in the ways in which speaker’s indicate attitude or stance over time), and
- the influence of pragmatic factors in grammatical change (such as the influence of the given/new distinction on word order change).

One area of intense study in historical pragmatics is the development of discourse markers, such as *well*, *actually*, *whatever*, *like*, *you know*, or *I think*. In the past, these were discounted as “empty” or “filler” items, but we now know that they serve important functions, in organizing and shaping our discourse and in managing interpersonal relations. They have existed in all historical periods and in all languages. For example, in Old English we find the use of *hwæt* ‘what’ as a marker of common ground similar to *you know* in Modern English.

- (31) **Hwæt**, we for dryhtene iu dreamas hefdon ... (“Christ and Satan”)²¹
 ‘You know, we before had joys in front of the lord ...’

Some discourse markers are of long standing and remarkably stable; here are Middle English examples of *I guess*, *you know*, and *well* from Chaucer’s fourteenth-century *Canterbury Tales*:²²

- (32) a. Mishap wol maken hem enemys, **I gesse** (“The Monk’s Tale”)
 ‘Mishap will make them enemies, I guess’
- b. I am **thow woost** yet of thy compaignye / A mayde (“The Knight’s Tale”)
 ‘I am, you know, yet a maid of your company’
- c. **Wel** quod oure hoost. I pray thee tel me than / Is he a clerk / or noon?
 (“Prologue, Canon Yeoman’s Tale”)
 “Well,” said our host, “I pray you tell met then, ‘Is he a clerk or not?’”

²¹ The example is cited from the *Dictionary of Old English web corpus* (<https://tapor.library.utoronto.ca/doecorpus/index.html>).

²² The examples are cited from the *Corpus of Middle English prose and verse* (<https://quod.lib.umich.edu/c/cme/>).

Others discourse markers, such as *like*, *whatever*, and *I'm just saying* are of much more recent vintage:²³

- (33) a. It was never now. Evie rolled her eyes. **Whatever.**
- b. I got nothing against him, **I'm just saying.**
- c. “Are you staying, **like**, forever?” asked Beatrice.

Historical pragmatics is interested not only in the inventory of discourse markers in earlier stages of a language but also in their sources and the processes by which they develop, typically via grammaticalization (see section 4.3.5), with their meanings arising out of invited inferences (see section 4.4.4).²⁴

4.5.4 *Pragmatic causes of change: Changing norms of politeness*

One study has proposed that the English language has changed fundamentally over time in respects to norms of politeness.²⁵ Politeness is understood as consisting of two opposing tendencies:

- “Positive face” represents our desire to be approved of. In attending to the positive face of our interlocutor, we give compliments, express thanks, use affectionate terms, and make reciprocal offers.
- “Negative face” represents our desire not to be imposed upon. In trying not to threaten negative face, we express deference, apologize and ask indirectly.

In Old English norm of politeness were unnecessary since the relations between individuals was based on kin loyalty, a strict social hierarchy, and mutual obligations. French courtly and chivalric norms of conduct were introduced in Middle English, what may be seen as “deference politeness”. The pronouns *you* and *thou*, as discussed above, marked social distinctions but were also used to maintain face. By Early Modern English, a system of positive politeness had emerged as witnessed by the frequent use of group identity markers, complimentary names, and hedges. Finally, contemporary society is one of negative politeness. The change from positive to negative politeness is correlated with three linguistic changes, as shown in Table 14.

Table 14 Linguistics correlates to the change from positive to negative politeness

formal change	positive > negative politeness
<i>thou</i> > <i>you</i>	<i>thou</i> is intimate and marks in-group membership <i>you</i> is deferential
<i>pray, prithe</i> > <i>please</i>	<i>pray/prithe</i> imposes on the hearer to do something <i>please</i> (< <i>if it please you</i>) makes performing the action contingent on the hearer’s will

²³ The examples are taken from twenty-first century fiction in COCA.

²⁴ See, e.g., Brinton (2017).

²⁵ See Jucker (2011), also Kohnen (2000, 2008).

<i>excuse me/ pardon me/ forgive me</i> > <i>sorry</i>	the older forms ask the hearer to forgive the speaker the new form expresses regret and is deferential
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5 SUMMING UP

Language change is inevitable and largely uncontrollable, though the rate of change may vary. Linguists see language change as a matter of stasis, leading neither to deterioration or to improvement in a language. Historical linguistics is concerned with study of the causes and mechanisms of language change, whether externally induced through language contact or internally motivated by the phonological and grammatical system of a language itself. Language contact effects are most clearly witnessed in the lexicon of a language, with the adoption of loanwords, although phonological and grammatical changes are possible, especially in situations where the languages in contact are socially and politically equivalent and spoken in a contiguous area. Language internal causes of change may be seen as primarily mechanical in nature, caused by physiological aspects of speech production, or functionally or cognitively motivated. Mechanical causes encompass assimilation and other conditioned sound changes but also tendencies toward symmetry in sound systems or chain shifts involving entire classes of sounds. Changes toward typologically consistent word order may also be seen as more or less mechanical. Both lexical and semantic change are functionally motivated by the expressive needs of speakers. The tendency toward regularization of morphological forms may also be understood as functionally motivated, as may the process of grammaticalization, which leads to the rise of new grammatical forms from lexical items. The predominant cognitive underpinnings of change are the process of analogy, which leads to the removal of irregularities in the language, the process of reanalysis, which creates new structures, and the processes of metaphor, metonymy, and invited inferences which are at work in both semantic change and grammatical change. Finally, we must recognize that social factors such as class, gender, and age are important determinants in language change as are pragmatic factors controlling language use in context.

RECOMMENDED READING

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EXERCISES

1. The following words are listed with their earlier and later meanings. What is the **semantic change** that each has undergone. Consult the types of change discussed in section 8.4.3.2 as well as metaphor and metonymy (section 8.4.4.3).

	<u>word</u>	<u>earlier meaning</u>	<u>later meaning</u>
a.	aroma	'distinctive smell of spices'	'a pleasant smell'
b.	sophisticated	'not pure, unnatural, altered'	'discriminating, refined, cultured'
c.	syndicate	'group transacting the affairs of a corporation of business'	'network of criminals'
d.	journey	'a day's travel, the distance usually travelled in a day'	'a march, ride, drive, or other modes of progression to a certain more or less distant place'
e.	raid	'a military attack or incursion'	'hostile attempt by a company to buy a major or controlling interest in another company'
f.	bruise	'to injure, batter, crush'	to damage by the weight of an impact or blow'
g.	brass	'metal alloy of zinc and copper'	'musical instrument (such as trombone, trumpet)'
h.	cool	'relatively low temperature'	'of a person, not affected by emotion or passion'
i.	blue	'color between green and violet'	'depressed, low spirited'
j.	knuckle	'bone joint'	'bone at a finger joint'
k.	hilarity	'cheerfulness'	'boisterous joy'
l.	stage	'platform in a theater'	'the dramatic profession'
m.	fan < fanatic	'an excessive or mistaken enthusiast, a devotee'	'a keen follower of a person, hobby, sport, etc.'

2. What is the **type of sound change** exemplified by the bolded sound in each set? Consult the discussion in sections 8.4.2.1 through 8.4.2.3.

- a. Hawaiian ***t**apu > kapu ‘forbidden’, tolu > k**o**lu ‘three’, taŋata > **k**anaka ‘man’
- b. Latin natāre > Spanish nad**a**r ‘to swim’
- c. Proto-Dravidian ***t**apu ‘to perish’ > Kannada tavu ‘to decrease’
- d. Latin **s**eptem ‘seven’ > Italian sette
- e. Latin **a**postolus, borrowing in Old Irish ap**s**tal
- f. Latin amica /k/ > Portuguese amig**a** /g/ ‘female friend’
Latin amica /k/ > Spanish amig**a** /ɣ/ ‘female friend’
- g. Latin hominen > French hom**m**e
- h. Latin **t**auru- > Spanish toro ‘bull’
- i. Proto-Germanic *maizon > Old English mā**r**a ‘more’
- j. Latin scola ‘school’ > French é**c**ole
- k. Latin peregrinus > Italian pellegrin**o** ‘pilgrim’
- l. Latin **c**amera ‘arched roof’ > French chamber**er**
- m. Proto-Germanic *kald > Old English cealb ‘cold’
- n. Old English per**u** > ME p**ē**re ‘pear’
- m. Basque **b**ake ‘peace’ > western Basque p**a**ke
- o. Proto-Germanic *cūð ‘known’ + jan > Old English c**ȳ**ðan ‘make known’
- p. OE h**ā**m > ME h**o**om
- q. Finnish *uro**h** > ur**h**o ‘hero’
- r. Swedish *dr**i**nka > dr**i**kka ‘to drink’
- s. Proto-Dravidian *ilay > South Dravidian elay
- t. OE hæ**p**se > ModE has**p**

3. Words often have a complex “route of transmission”, deriving from an “ultimate source” but coming into the language from an “immediate source”, sometimes through intermediate languages. Use a good dictionary of English (preferably the *Oxford English Dictionary*, if you have access to it) to describe the routes of transmission of the following borrowings.

- a. safari
- b. kiosk
- c. sketch
- d. veranda
- e. tomato
- f. camel
- g. sofa
- h. barbecue
- i. hammock
- j. penguin

4. In Old English we find the following noun singular and plural forms. Explain the process(es) of change that account for the plural forms in Modern English. Note that in

the history of English, unstressed vowels, such as the *-a-* vowel in the ending *-as* was reduced to [ə] and then lost in most cases.

a.	<i>fōt</i> ‘foot’	<i>fēt</i>	h.	<i>oxa</i> ‘ox’	<i>oxan</i>
b.	<i>bōc</i> ‘book’	<i>bēc</i>	i.	<i>sweord</i> ‘sword’	<i>sweord</i>
c.	<i>lomb</i> ‘lamb’	<i>lombru</i>	j.	<i>scēap</i> ‘sheep’	<i>scēap</i>
d.	<i>cild</i> ‘child’	<i>cildru</i>	j.	<i>glōf</i> ‘glove’	<i>glōfa</i>
e.	<i>nama</i> ‘name’	<i>naman</i>	k.	<i>spere</i> ‘spear’	<i>speru</i>
f.	<i>fæder</i> ‘father’	<i>fæderas</i>	l.	<i>bāt</i> ‘boat’	<i>bātas</i>
g.	<i>box</i> ‘box’	<i>boxas</i>	m.	<i>dæd</i> ‘deed’	<i>dæde</i>

5. “The half-life of strong verbs” describes a study applying the methodology and concepts of evolutionary biology to historical linguistics. A more recent in the same vein is Newberry et al. (2017), which looks at verbs which have variant past tense forms in Modern English (such as *plead* ~*pleaded/pled*). These scholars attempt to determine whether increasing frequency of one form over another occurs through conscious “selection” by speakers or is a matter of “stochastic drift” (random change), both of which are at work in evolutionary biology. Their results are based on the *Corpus of historical American English*, a corpus of American English from 1810-2009.

They find that out of 36 verbs, 30 are determined by chance and only 6 are a case of selection, with

- Two moving towards the regular form: *wove* > *weaved*, *smelt* > *smelled*, and
- Four moving towards the irregular form: *lighted* > *lit*, *waked* > *woke*, *sneaked* > *snuck*, *dived* > *dove*.

While regularization follows principles of analogy, they admit that the latter is “more mysterious”. They suggest that rhyming may be at work, with

- drive/drove* motivating the choice of *dove*,
- bite/bit* motivating *lit*, and
- break/broke* motivating *woke* (no rhyme is found for *snuck*).

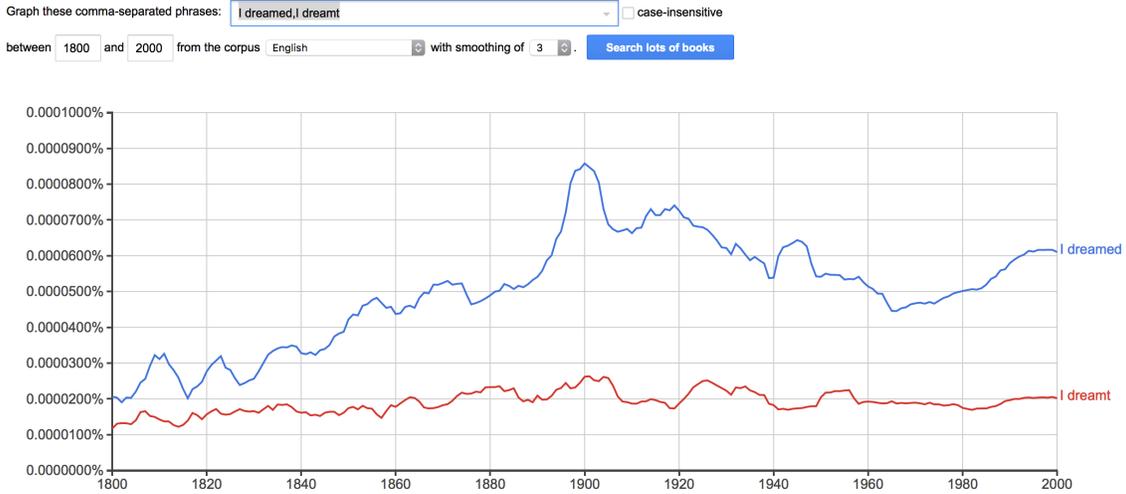
Rhyming parallels can also be understood as a case of analogy. In contrast to Lieberman et al. (2007), in this study *wed* is moving towards the irregular *wed*, not the regular *wedded*, perhaps by analogy with *spread/spread*.

Use Google Ngram (<https://books.google.com/ngrams>), test Newberry et al.’s results. Google Ngrams is a (rather basic) way of searching Google Books (which covers roughly the same 200-year period as Newberry’s data). Test the six verbs above, plus *wed*:

- wove/weaved* *smelt/smelled* *lighted/lit* *waked/woke*
- sneaked/snuck* *dived/dove* *wedded/wed*

In order to ensure that just the past tense and not the past participle comes up in your search, place a pronoun in front of the verb, as in the screen shot below:

Google Books Ngram Viewer



Note that it is possible to search British English, American English, or both varieties:



Do you get the same results (direction of change) as Newberry et al. did? Are there differences between British English and American English? It is known (from other studies) that the *-t* forms such as *dwelt* and *smelt* are more common in British English, whereas *snuck* and *dove* are rare in British English.

6. Compare the pronunciation and the spelling of the following words:

soften	epistle	fasten	often
castle	bristle	hustle	fasten
listen	moisten	bristle	
whistle	hasten	christen	

What are the sound changes affecting the medial consonant clusters? Note that the changes took place after spelling was fixed and hence the spelling represents the older pronunciation. Are there any exceptions? How might you explain these exceptions?

7. Compare the earlier (Middle English) and later borrowings from French (16th c. and later):

earlier borrowing	later borrowing
chestnut	chevron
champion	chandelier
chief	chef
gentle	genre
germ	rouge

In the period between the borrowings, two sound changes occurred in French (affecting the sounds spelled ‘ch’ and ‘g’). Describe these sound changes.

8. Two sound changes in the history of Old English are:

A palatalization: e.g., when [k] (spelled ‘c’) occurred before a long or short front vowel (i, y, e, æ), it was palatalized to [č], as in *cild* [čild]; and

B umlaut: e.g., the fronting of $\bar{o} > \bar{e}$ before a front vowel or glide, as in **gōsi > gēs* (Both umlaut and palatalization are discussed in the chapter.)

We know that these changes occurred in a particular order, with one sound change ceasing to operate before the other began to operate. This is known as “rule ordering”. Rules apply only one time.

In Old English we find words

cēlan ‘to make cold’ pronounced /kēlan/ (which derives from *cōl* /cōl/ ‘cool’ and addition of a **-jan* suffix)

cȳ ‘cows’ pronounced /kȳ/ (the plural of *cū* /kū/, which had a prehistoric **-iz* ending)

Based on data such as this, in what order did these rules apply?

9. Use a good dictionary to determine the sources of the following words and expressions in English:

- a. pen name
- b. world view
- c. academic freedom
- d. moment of truth
- e. loan word
- f. joy of life
- g. brain wash
- h. flea market
- i. power politics
- j. peppermint
- k. comic opera
- l. id, ego

Describe the process that seems to account for the introduction of these terms into English?

10.

a. In Old English verb forms, an alternation is found between the root consonant in the past tense forms, with **þ** (representing the interdental fricative) in the singular past tense and **d** the plural past tense, as in

snīþan ‘to cut’

snāþ ‘I/he/she/it cut’

snid-on ‘we/you/they cut’

līþan ‘to travel’

lāþ ‘I/he/she/it traveled’

lid-on ‘we/you/they traveled’

In internal construction, we assume that there was originally the same consonant in both the singular and the plural form. Which consonant would you reconstruct, **p** or **d**? (The alternation in the root vowels is ablaut, characteristic of strong verbs. This does not concern you here.)

Note that one also finds **d** in both past tense forms, as in
 bīdan ‘to await’ bīd ‘I/he/she/it waited’ bid-on ‘we/you/they waited’
 But we do not find verbs with **p** in all the forms.

b. Likewise, in Old English verb forms, an alternation is found between the root consonant in the past tense forms, with **s** in the singular and **r** the plural, as in

cēosan ‘to choose’ cēas ‘I/he/she/it chose’ cor-on ‘we/you/they chose’
 lēosan ‘to lose’ lēas ‘I/he/she/it chose’ lor-on ‘we/you/they lost’

We assume that there was originally the same consonant in both the singular and the plural form. Which consonant would you reconstruct, **s** or **r**?

Note that one also find **r** in both past tense forms, as in
 teran ‘to tear’ tær ‘I/he/she/it tore’ tær-on ‘we/you/they tore’

11. Look at the following Old English sentences:

- a. He ne andwyrde þam wife æt fruman
he not answer the woman at first
- b. Ne geseah nan cepa ealand ne weroþ
not saw none (ne + an ‘not + one’) merchant island nor shore
- c. men ne cunnon secgan ... hwa þæm hlæste onfeng
men not can say ... who that cargo received
- d. ne he nan word ne cwæð, for þam þe he cucu næs,
nor he none word not speaks, because he living not-was (ne + wæs ‘not + was’)

How does negation in Old English differ from negation in Modern English?

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GLOSSARY OF TERMS

ablaut	An alteration in the root vowel to indicate grammatical meaning such as past tense, as in <i>ring</i> ~ <i>rang</i> .
adstratum	Language-contact effects that result from the mixture of languages spoken by groups of equal political and social power.
amelioration	Semantic change towards a more favorable meaning, as in <i>fame</i> , originally meaning ‘public report, common talk’.
analogy	A process of removing irregularities in the language by making a form conform to the pattern of another form with which it is associated, as when the older plural <i>kine</i> is replaced by <i>cows</i> by analogy with the standard marking plurals with <i>-s</i> .
apocope	Deletion of a final sound, such as the pronunciation of <i>drown(ed)</i> .
apparent-time study	A sociolinguistic study that assumes differences in usage between speakers of different ages represent ongoing changes that begin with younger speakers.
assimilation	A sound change in which a sound becomes similar or identical to an adjacent sound in voicing, manner of articulation, and/or place of articulation as in [s] > [z] in <i>goose</i> [s] and <i>gosling</i> . Assimilation may affect the first sound or the second sound in the sequence, may be complete or partial, or may be a distance.
complex preposition	Sequences of words functioning as a unified preposition, such as <i>in light of</i> , <i>depending on</i> or <i>near to</i> .
creolization	The process whereby a pidgin develops functionally and linguistically over time to become a native language (a creole).
deontic meaning	Meaning that is concerned with action (permission, obligation, duty), as in <i>You may be excused</i> .
diphthongization	the change of a monophthong into a diphthong, typically by the addition of a glide, as in [i] > [ai].
discourse marker	An element (typically short) that has little lexical content but serves interpersonal and textual functions in discourse, such as <i>well</i> , <i>actually</i> , <i>you know</i> , <i>I mean</i> , <i>I think</i> .
dissimilation	A sound change in which a sound becomes less like an adjacent sound in voicing, manner of articulation, and/or place of articulation, as in Latin <i>arbor</i> > Spanish <i>arbol</i> .
drift	The gradual movement of a language over time in a consistent direction, with unconscious changes moving, e.g., from OV to VO word order.
ease of articulation	A motivation for sound change whereby a speaker exerts the least effort in articulating sounds.
epistemic meaning	Meaning that is concerned with belief (possibility, probability, prediction, certainty), as in <i>It may rain this afternoon</i> .
folk etymology	The attribution of a new history and usually a new form to a word which has otherwise become opaque (due to loss of the original word or borrowing), as when <i>asparagus</i> becomes (dialectally) <i>sparrow grass</i> .
fricativization	A sound change from a stop consonant to a fricative, as in [k] > [s] in <i>electric</i> and <i>electricity</i> .
generalization	Semantic change towards a broader meaning, as in <i>holiday</i> , originally meaning ‘holy or consecrated day’.
grammaticalization	The process that converts a lexical word or phrase into a grammatical marker, e.g., inflection, such as the development of the <i>be going to</i> future.
Grimm’s Law	An unconditioned sound change in Germanic affecting all the original stop consonants, including the shift from voiceless stops to fricatives in Lat. pater and English father , showing [p > f] and [t > θ].
invited inference	The enrichment of conventional meaning by the incorporation of meanings

	that are merely implied in the context of discourse, as when the ‘although’ meaning of <i>while</i> is added to its temporal meaning ‘during’.
laxing	A sound change from a tense to a lax vowel, as in [e] > [ɛ].
lenition	A sound change involving weakening of a consonant from a stop to a fricative, a fricative to an approximant, or a voiceless to a voiced sound, as in OE <i>fæder</i> > ModE <i>father</i> .
linguistic purism	View that language must be protected from external forces that may lead to detrimental change.
loanword	A lexical item that is adopted from another language, such as the case of <i>bungalow</i> , a borrowing from Hindustani into English.
metaphor	A cognitive process underlying change in which one semantic domain is understood in terms of another, as when time is understood spatially; e.g., <i>short</i> (as in <i>short time</i>) comes to mean ‘short in duration’
metathesis	The reversal or reordering of two sounds or syllables as in OE <i>brid</i> > ModE <i>bird</i> .
metonymy	A cognitive process underlying semantic change in which an object or concept is denoted by naming a thing associated with it, for example when <i>crown</i> comes to mean ‘kingship’.
modal auxiliary	A verb subordinate to the lexical verb whose primary meaning is the expression of deontic and epistemic modality (q.v.). The core set consists of <i>can/could</i> , <i>shall/should</i> , <i>may/might</i> , <i>will/would</i> , and <i>must</i> .
monophthongization	The change of a diphthong into a monophthong, as in [iu] > [u].
nasalization	A sound change in which the velum is lowered (allowing air to exit the nasal cavity), thus altering the typical articulation of a vowel or consonant, as in the vowel in <i>sin</i> compared to the same vowel in <i>sit</i> .
palatalization	A sound change to a more palatal place of articulation, as in OE <i>cild</i> with [tʃ] from an original *k.
pejoration	Semantic change towards a less favorable meaning, as in <i>vulgar</i> , originally meaning ‘ordinary, customary’.
raising	A sound change involving articulation of a vowel in a higher position, as in [e] > [i].
real-time study	A sociolinguistic study that follows changes as they occur in historical time.
reanalysis	The assignment of new structural divisions (rebracketing) to a syntactic phrase, as in the change from [in] [view] [of that] to [in view of] [that].
reconstruction, internal	a method of comparing allomorphic variants in a language in order to determine the original form in an older stage of the language from which they derive by known sound changes.
reconstruction, comparative	a method of comparing cognates in daughter languages in order to determine the form of words in the (typically unattested) proto- or parent language.
reduction, vowel	A sound change involving the laxing and centralization of a vowel to [ə], as in the vowel in <i>cut</i> from [ʊ] to [ə].
rhotacism	A sound change from [s] or [z] to [r], as in the related words <i>was</i> and <i>were</i> .
S-curve	The pattern of linguistic change, which starts slowly, increases speed and proceeds rapidly but stops before completion.
sign	A signal that represents some object or state of affairs via resemblance (iconic sign), via proximity (indexical sign), or arbitrarily or conventionally (symbolic sign).
sound change, conditioned	A sound change that is determined by the phonetic environment in which the sound occurs, such as the change of [d] to [t] following a voiceless sound.
sound change, unconditioned	A sound change that is not determined by the phonetic environment in which the sound occurs; every instance of a particular sound changes, such as the change of *p > [f] in Grimm’s Law (q.v.).
specialization	Semantic change towards a narrower meaning, as in <i>lust</i> , originally meaning ‘desire’.
speech act	An utterance which performs an action, such as commanding, promising, representing, and declaring, as in <i>I order you to open the window</i> , <i>I promise</i>

substratum	<i>to pay you tomorrow, It is raining, I declare you man and wife.</i> Language-contact effects that result from the language of the (socially/politically) dominant group being influenced by the language of the dominated group.
superstratum	Language-contact effects that result from the language of the (socially/politically) dominant group influencing the language of the dominated group.
syncope	The loss of a medial sound, such as in the pronunciation of <i>bus(i)ness</i> .
umlaut	A sound change – a kind of assimilation – in which a high vowel or [j] in a syllable fronts the vowel of the preceding syllable, as in <i>fōti > fēt</i> .
verb, strong	A verb in English, often called “irregular”, that forms its past tense (and past participle) by a process of vowel alternation (q.v. ablaut), such as <i>drive, drove, driven</i> .
verb, weak	A verb in English, often called “regular”, that forms its past tense (and past participle) with -ed, as in <i>hope/hoped</i> [-t], <i>wait/waited</i> [-əd], or <i>plan/planned</i> [-d].
word order typology	The position of the major elements in the sentence, subject (S), verb (V), and object (O), along with associated other characteristics.