

Historical linguistics

What are the results of language change?

When accompanied by splits of populations, language change results first in dialect divergence (the kinds of differences we see between British and American English; between the French of France and of Quebec; between New World and Old World Spanish and Portuguese).

- Initial problems with intelligibility begin long before we would consider talking about separate languages. Certain systematic comprehension difficulties can occur even within relatively closely related dialects.

E.g. - Chicago vs Philadelphia speakers in your homework.

Over longer time periods, we see the emergence of separate languages, and when a group of languages all descend from a common parent, we call them a family.

1. The puzzle of language change

- Language is constantly changing. This presents us with a puzzle:
 - language change hinders communication,
 - and it is also negatively evaluated by socially dominant groups.

Nevertheless it is a universal characteristic of human language and cannot be stopped.

1.1 How and why does language change?

Changes can take originate from **language learning**, or through **language contact**, **social differentiation**, and **natural processes in usage**.

- **Language learning**: the process of linguistic replication is imperfect, result is variable across people.
 - A bias in the learning process -- for instance, towards regularization of paradigms (e.g. the replacement of older *holp* by *helped*) -- can cause systematic drift, generation by generation.
 - But frequently, the mutation of a language through imperfect learning is essentially random.
- **Language contact**: in contact situations, languages often borrow words, sounds, constructions etc.
- **Social differentiation**: social groups adopt distinctive norms of dress, adornment, gesture, speech.
 - Many instances of language change, especially those which differentiate one dialect or language from another, start out as markers of some social group.
 - Sociolinguistic research has shown that all changes have a social dimension while they are in progress, with one social group or another leading the change and others following behind.
- **Natural processes in usage**:
 - 1) Rapid or casual speech naturally produces processes such as **assimilation** (pronouncing neighboring sounds more like each other), **dissimilation** (pronouncing neighboring sounds less like each other), **syncope** (eliminating a vowel in the middle of a word) and **apocope** (eliminating a vowel at the end of the word).
 - Through repetition, particular cases may become conventionalized, and therefore produced even in slower or more careful speech.
 - 2) Certain changes arise from pressure to maintain a certain amount of symmetry in the linguistic system. This is especially so in changes in vowel systems. If one vowel changes its pronunciation significantly, it often pulls the rest of the system with it.
 - 3) Word meanings can change in a similar way, through conventionalization of processes like **metaphor** and **metonymy**.
 - E.g., meaning of *trivial* went from "pertaining to the trivium, the elementary areas of study" to "simple or easy to the point of being meaningless"

1.2 But why?

If we have a language instinct, why aren't we born knowing all of the details of language?

- Then we could all talk to each other; children wouldn't have to spend so much time learning to speak. Pinker gives evolutionary reasons why language blueprint is instinct, but details are learned.
- This allows flexibility and extensibility, e.g. creation of new words for new concepts.
- It gives a way for people to sync up their language if, by a genetic mutation, their UGs diverge a bit.

Why doesn't language eventually go into some perfect state where pronunciation is as easy as possible, and the system is perfectly symmetrical?

- Changes resulting from internal pressures seem to be a constant balancing act,
- an attempt to maintain an equilibrium that is constantly disturbed by other changes.

1.3 The analogy with evolution via natural selection

Darwin himself made an analogy between evolution of species via natural selection and language change.

- At any given time within a population, there is variation. Some variants survive and others are eliminated. Overall effect is a drift from an older set of characteristics to a newer set of somewhat different traits.
- Different species emerge when members of one population cannot breed successfully with members of the other. Different languages arise when members of the two populations can no longer understand each other.

There are some key differences between grammars and genotypes:

- Linguistic traits can be acquired throughout one's life from different sources, though initial acquisition & (to a lesser extent) adolescence seem to be crucial stages.
- Acquired (linguistic) traits can also be passed on to others.
- Linguistic history need not have the strict form of a tree, with languages splitting but never rejoining, whereas genetic evolution is largely constrained to be tree-like.

Practically, the assumption that linguistic history is tree-like is a good working approximation.

The basic sound structure and morphology of languages usually seems to "descend" via a tree-structured graph of inheritance, with regular, lawful relationships between the patterns of "parent" and "child" languages.

2. Types of Change

All aspects of language change. We can think about this in terms of changes in subparts or modules of the grammar, in the syntax, phonology, semantics, morphology, and pragmatics.

2.1 Pragmatic shifting

A syntactic construction with a particular pragmatic function may acquire a new function over time.

- For instance, many languages have impersonal pronouns that start out as nouns meaning "person" E.g., English *one* and French *on* from Latin *homo*="person"; German *man* from German *mann*="man").
- Eventually they come to be used in generic contexts, like *One is always uneasy in such situations*
- Sometimes, the function of these pronouns expands further – they are also used in non-generic contexts with a passive meaning: French *On a tué le président* = ON has killed the president = The president was killed
German *Man hat ein Haus abgebrannt* = MAN has burned a house = A house was burned
- Eventually, these constructions may encroach on the actual passive so much that the passive will go out of use entirely. In this way, pragmatic change sometimes leads to syntactic change.

2.2 Semantic drift

Semantic changes usually take the form of drift in the meaning of a particular word, sometimes randomly, but usually on a roughly metaphoric path, like that of *trivial* described above.

- Because such changes affect specific words rather than larger grammatical classes, they are usually not very systematic. We cannot usually make broad statements about semantic changes within a given language.

2.3 Syntactic change

The structure of sentences within a language changes over time. E.g., a number of European languages have gone from being primarily SOV to being SVO during their recorded histories (English, Romance languages).

- a) ac he sigewæpnum forsworen hæfde
- b) but he had forsworn (put a spell on) the victory-weapons

Syntactic changes of this sort are systematic - they affect not specific sentences, but entire rules of the grammar.

2.4 Sound change

The biggest success story in historical linguistics (and perhaps in linguistics in general) is in our understanding of sound change, i.e. the ways that pronunciations and phonological systems change over time.

Why? High-quality research on this area has been going on for well over a century, since the work of Sir William Jones (mentioned in the PBS Nova documentary)

Also because of the nature of sound change itself.

- Sound changes are very regular: generally they affect whole phonological systems (not individual words).

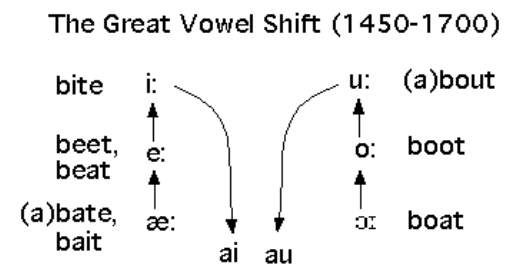
Unconditional sound change: an old sound becomes a new sound in every phonological environment.

E.g., a change between Middle and Early Modern English (around Shakespeare's time) is the upheaval known as the **Great Vowel Shift**.

In earlier stages of English, there was a **length distinction** in the English vowels, and the Great Vowel Shift altered the **position** of all the long vowels, in a giant rotation.

- The nucleus of the two high vowels (front "long i" /i:/, and the back "long u" /u:/) started to drop, and the high position was retained only in the offglide. Eventually, the original /i:/ became /ai/ -
 - "long i" in Modern English is pronounced /ai/: 'bite': /bait/.
 - "long u" found its nucleus dropping all the way to /au/:
 - earlier 'house' /hu:s/ became /haʊs/.
- All the other long vowels rotated, mid vowels /e:/ and /o:/ rising to fill the spots vacated by the former /i:/ and /u:/ respectively, and so on.
 - Hence pronouns 'he', 'she' are written with /e/ (reflecting the old pronunciation), but sound as /i/.

In this chart, the words are located where their vowel used to be pronounced - where they are today is indicated by the arrows.



Conditioned sound change: a change that apply in certain kinds of environments and not in others.

E.g., flapping of /t/ & /d/ in American English. Earlier, all instances of /t/ were essentially the same, similarly for /d/. Now, /t/ and /d/ sometimes pronounced as [ɾ], but not for every instance of /t/ and /d/.

This change has only occurred when the sound is before an unstressed vowel in non-word-initial position.

Note, crucially, that while such a change is not across the board, it is nonetheless completely regular according to rules that can be formulated in purely phonological terms. This is the power of sound change.

In the 18th century it was first recognized that Sanskrit, the ancient sacred language of India, must somehow be related to the classical languages of Europe, including Greek, Latin and Gothic among others.

As scholars began to compare the languages in detail, they found that they could make broad statements about correspondences between the languages.

E.g., Jacob Grimm, following a Danish linguist Rasmus Rask, noted that the Germanic languages (including German, Dutch, English, Norse and the extinct language Gothic) tended to have fricatives where the other languages had voiceless stops:

English=Germanic			Latin=non-Germanic		
father	three	hund(red)	pater	tre:s	centum

Grimm's Law: Indo-European *p -> Germanic *f and so forth, OR *voiceless stop -> fricative

It was originally thought that these are tendencies, not absolute rules, because of exceptions, like the following:

English or Gothic = Germanic	Latin = non-Germanic	Change:
stand	fisk (Goth.)	No change in voiceless stops: t, k t->d OR voiceless stop->voiced stop
played (past participle)	fader (Goth.)	
	sta:re piscis	
	ama:tus pater	

In both instances we would have expected, on the basis of Grimm's Law, to have a voiceless fricative.

Verner (late 19th century): the apparent exceptions to Grimm's Law fall into phonologically-defined classes.

So the first two follow /s/ - where Indo-European stops followed /s/, they remained stops.

This is not surprising if we think about what happens to stops after /s/ in Modern English (no aspiration).

With the other two, in the original language, the stress was on the syllable following the voiceless stop.

Sanskrit "father" is pitá, and the Greek word is paté:r. Non-initial /p,t,k/ preceding stress came out as /b,d,g/.

Grimm's Law was thus reformulated as Verner's Law, as a conditioned but exceptionless change.

Verner's modifications:

p → p / s__

p → b / P__σ' (P = phoneme, σ = syllable ' = stress)

p → f otherwise etc, for the other two sounds

OR

voiceless stop → unchanged / s__

voiceless stop → voiced / P__σ'

voiceless stop → fricative otherwise

Junggrammatiker or Neo-Grammarians proposed the theory that all sound change is regular.

3. Language change and historical reconstruction

- The techniques that have been developed to deal with sound change, combined with certain important assumptions, permit us to reconstruct the sound system -- and some of the vocabulary -- of unattested parent languages from information about daughter languages.

E.g., from Gothic, Greek and Sanskrit forms for *father* + knowledge about what sorts of sound changes are likely: "father" in the ancestor of all of these languages was something like *pxtér.

A great deal of the phonology, morphology, vocabulary and syntax of this language, which we call **Proto-Indo-European**, has been reconstructed, and we can be confident that our reconstructions are fairly accurate, even though PIE was spoken about 6,000 years ago and has no written legacy.

Analogy

This is mostly morphological change, where the inherited form for some category is replaced by a form which has been extended from some slightly different category. Usually, in this way irregularities are leveled out.

E.g. *helped* from *holp*. The ending -ed was extended on analogy with verbs like *played* and *worked*.

3.1 How do we know how languages are related?

In order to figure out whether two languages are related, we attempt set up regular sound correspondences between them:

we look for pairs of words that look like **cognates**, i.e. words that descend from a common word in an ancestral language,

and look for consistent patterns of one sound in language A corresponding to one sound in B.

Initial consonants in English and German:

- English stop /p/ corresponds to the German affricate /pf/.
path-Pfad pan-Pfanne pepper-Pfeffer pipe-Pfeiffe plant-Pflanze plum-Pflaume
- Corresponding to English /t/ word-initially, German has the affricate /ts/, written as z.
tame-zahm to-zu tongue-Zunge ten-zehn twenty-zwanzig tin-Zinn
- Initial /d/ in English corresponds to German /t/:
day-Tag dance-tanzen dew-Tau devil-Teufel drink-trinken do-tun
- And finally, initial English /θ/ correspond to German /d/:
that-das thick-dick thin-dünn thirst-Durst three-drei though-doch

If we can set up sound correspondences like these for a pair of languages, they must have a common ancestor.

The probability of consistent and extensive patterns arising by chance or due to borrowing from one language into the other are vanishingly small.

Once we have correspondences like this, we can try to figure out the original sound and the sound changes that derived the attested sounds from it in each language.

We can also use this method to figure out interrelationships within the larger group.

- When a change occurs within a speech community, it is diffused across the entire community of speakers.
- If two communities are no longer in contact, a change that happens in one will not get diffused to the other.

Languages that share innovations are considered to have shared a common history apart from other languages, and are put on the same branch of the language family tree.

- E.g., English, German and Gothic are all Germanic languages – they all have /f/ as the first sound in words meaning "father", "five" and "for", unlike the other IE languages, which have a /p/ in this position (cf. Greek pater, pente, pro:).

The sound change *p > *f is a shared innovation of the Germanic languages.

- Further, German and English form a group to the exclusion of Gothic because, e.g., they have /r/ sounds where Gothic preserves the older Germanic /z/, as in English more and German mehr vs. Gothic maiza.

The sound change *z > *r is a shared innovation of the West Germanic languages.

- Further, the Bavarian and Alemannic dialects of modern German (which are not mutually intelligible) belong to a group that excludes English because they have the velar fricative /x/ where English has the older /k/, as in Bav. mocha, Alem. mache vs. English make.

So the sound change *k > ch is a shared innovation of the so-called High German dialects.

In other words, we can tell not only which languages are related, but how a group of related languages fits together in a family tree.

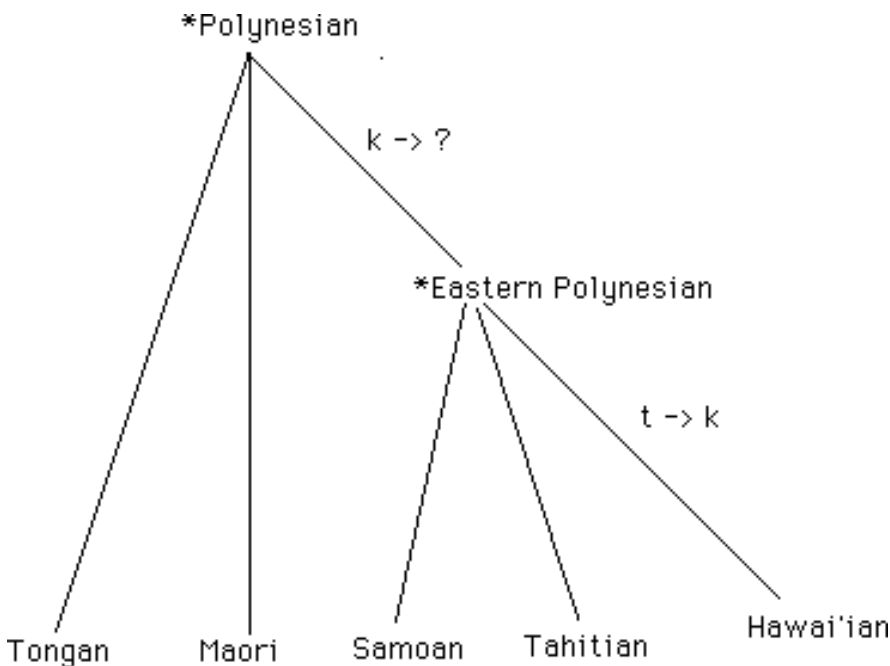
Try it on the several cognate sets in five languages of the Polynesian family listed here.

English Gloss	Tongan	Maori	Samoan	Tahitian	Hawai'ian
1. bird	manu	manu	manu	manu	manu
2. fish	ika	ika	i ? a	i ? a	i ? a
3. to eat	kai	kai	? ai	? ai	? ai
4. forbidden	tapu	tapu	Tapu	tapu	kapu
5. eye	mata	mata	mata	mata	maka

6. blood	toto	toto	Toto	toto	koko
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- No changes happened in the nasal consonants or in the vowels, i.e. all the languages agree.
 - But we can observe in lines 2 and 3 that wherever Tongan and Maori have /k/, Samoan, Tahitian and Hawai'ian have /ʔ/ (glottal stop).
- There was an unconditioned change /k/->/ʔ/ in the Eastern branch, or a change /ʔ/ -> /k/ in the Western one. We choose the first as more likely
- backing of consonants is more common than fronting (e.g. in Cockney English), and
 - culture history: Polynesia was peopled from west to east, so there was no time when the Western speakers were all in one place without the Easterners.
- Next, in lines 4 - 6 there is a systematic correspondence between /t/ in the first 4 languages and /k/ in the easternmost, Hawai'ian. This is a systematic, unconditioned sound change, this time in only one language.

This is what a family tree of the five Polynesian languages would look like, based on the small data set above (the picture is somewhat more complex when we look at other cognate sets):



3.2 How far back can we go?

- Our methods of reconstructing earlier forms of language are at base little more than educated guesses.
 - Because not all language change is sound change, and certain irregularities creep in, every stage of reconstruction is bound to have a small number of errors.
 - Thus the further back we go, the less certain we can be of our guesses.
- Most linguists agree that our methods for reconstruction will take us only as far back as about 5000 - 7000 years
 - after that, the number of cognate sets available for reconstruction becomes just too low to give results that can be reliably distinguished from chance relationships.
 - Although it would be very satisfying to be able to link up some of the existing families at a higher level, the evidence seems too weak to allow us to do so.

- A minority of scholars, however, argue that this is possible, and one particularly well-known group of such scholars goes by the name of Nostraticists, derived from their views that there exists a super-family of languages they have called the "Nostratic".
 - A New York Times article from 1995 presents a well-balanced view of the [Nostraticist](#) position.
 - Dr. Donald Ringe (in PBS video), an expert on the ancient Indo-European language Tocharian and one of the world's leading Indo-Europeanists, is one of the chief critics of the Nostraticist position.