

The development of languages is nothing like biological evolution

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The development of natural languages follows clearly discernible processes which, contrary to the claim by Robert T. Pennock in his book *Tower of Babel*, in no way resemble the concept of biological evolution. The changes that have occurred in the Indo-European language family, for example, demonstrate that languages follow a ‘downhill’ simplification in inflections, etc. by natural processes. The huge ‘uphill’ growth of languages in their vocabulary and expressiveness only comes about through human intelligent input. Thus, the changes observed in language development are quite different to the processes proposed for biological evolution, so any analogy is completely unfounded.

Modern popular presenters of biological evolution do not often make a comparison between it and the development of natural languages, although such prominent figures as Charles Lyell and Charles Darwin did so.¹ A recent book by Robert T. Pennock² presents such a comparison anew with the claim that this is quite significant — the book has been highly praised for this by some evolutionists.

The basic idea, as presented by Pennock, is that all languages have descended from ‘a single original language (or perhaps a few)’³ and languages have developed through gradual uniform changes:

‘Even though the record of transitional sequences is quite incomplete, the evidence taken together clearly supports the thesis that the different linguistic kinds we now observe arose through gradual transformation from earlier, ancestral forms.’⁴

Also, the processes involved are supposed to be naturalistic and undesigned:

‘[Natural] languages ... developed into and from one another over time, through piece-

meal construction and unplanned transformations. ... Though not perfectly Darwinian, this ongoing transformation is clearly an evolutionary process and a close analogy to biological evolution in its most significant aspects.’⁵

Pennock makes several references to the Indo-European language family (defined below) to support his claims.

This paper presents an overview of the most important kinds of change which have happened within the Indo-European language family, and shows that the comparison of language development with biological evolution is completely invalid. No previous knowledge concerning the development of languages is presumed, and it is hoped that the paper will remove some popular misconceptions about the history of some of the major European languages.⁶

Emphasis is placed on the Indo-European language family for three reasons:

1. Several of the languages of this family will be familiar to many readers;
2. This family is a good representative for the most important kinds of changes that have happened universally; and
3. Most popular presentations by evolutionists have been based on examples from this family (including by Darwin).

Note that there is no attempt in this paper to give a detailed examination of the biblical account of the confusion of tongues at Babel or the dispersal of the various peoples thereafter; neither is there a study of the evolutionary theories concerning the origin of **language** itself.⁷ Rather, the paper will only concentrate on the important **changes** which have occurred within languages and the proposed comparison with biological evolution.

It is appropriate to summarize here the main arguments of the paper concerning the kinds of change which have happened:

- Natural or undesigned processes of change have only caused simplification or loss of internal structure in languages.
- All growth of languages or increase of their complexity is a result of conscious and intelligent input, including design in several cases.
- The massive crosscurrents between languages (borrowings of various kinds⁸) are an enormous factor in their

Table 1. Verbal endings common to some Indo-European languages.

English	Sanskrit	Classical Greek	Classical Latin	Old High German	Old Slavonic
I bear	bhar-ami	pher-o	fer-o	bir-u	ber-a
thou bear-est	bhar-asi	pher-eis	fer-is	bir-is	ber-esi
he bear-eth	bhar-ati	pher-ei	fer-it	bir-it	ber-etu
we bear	bhar-amas	pher-omes	fer-imus	bir-ames	ber-emu
you bear	bhar-ata	pher-ete	fer-itis	bir-et	ber-ete
they bear	bhar-anti	pher-onti	fer-unt	bir-ant	ber-atu

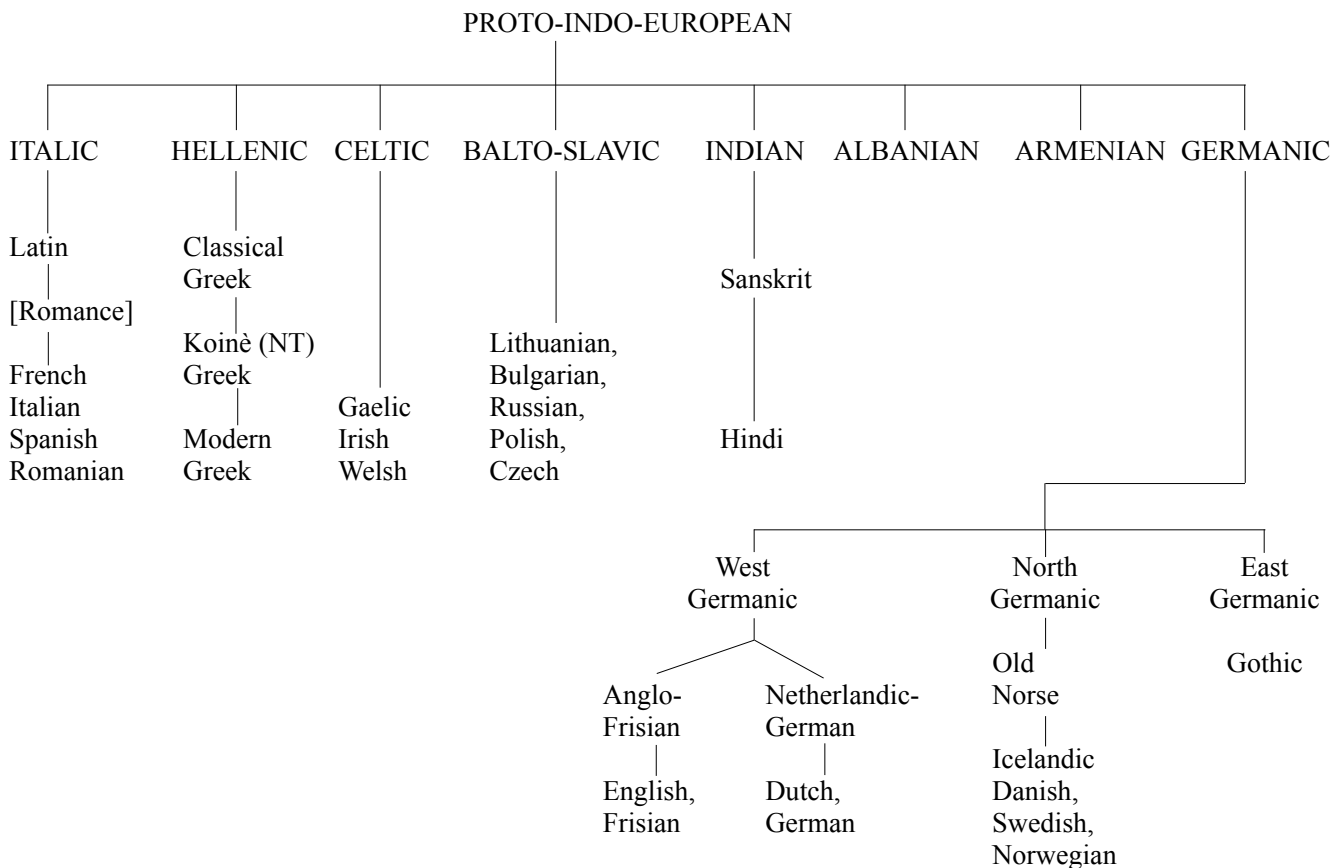


Figure 1. Indo-European family tree with major languages.

histories, and have no analogy in classical biological evolution.

- Great changes in some major languages have mainly happened in several short periods, which is much faster than commonly supposed.

The Indo-European language family

The languages of the world have been classified genetically, and languages appearing to have a common origin have been grouped together into a **family**. In this paper we shall concentrate on the **Indo-European**⁹ (**IE**) language family which consists of a large number of languages. All are presumed to have descended from a single common ancestor language known as **Proto-Indo-European (PIE)**.

Languages have been included within the IE family not only because of the huge number of similarities between particular words, but also because of the regularity of correspondences in sound and morphology.¹⁰ To demonstrate this, Table 1 gives the verbal forms of the verb 'to bear' in several older languages of the IE family (with the archaic English forms used to show further similarity).¹¹ Similarity in inflexions is stronger evidence of common origin than common vocabulary, as words are easily borrowed and assimilated, but it is rare for whole morphological systems to be borrowed from one language into another.

Figure 1 gives a standard diagram of some of the major IE languages in a family-tree style. This model is useful for gaining a basic overview of the IE languages, but it is widely considered to be inadequate and deceptive in a number of ways. It ignores the multitude of dialects¹² which have existed, and thus omits very many branches. Most importantly, there have been many occurrences of massive borrowing by one language from another, so in terms of vocabulary there should be, for example, a very thick line from French to English and also one from Latin to English, as we shall see below.

To account for the initial divergence of the branches of the family, Johannes Schmidt proposed in 1872 his **Wave Theory** (*Wellentheorie*), according to which

*'changes begin in a specific geographic area and spread out concentrically from that point like waves created when a pebble is dropped into a pool.'*¹³

*'The extent of the spread then depends on the extent of the intercourse between neighbouring areas. This theory is probably a simplification of the facts, but is unquestionably nearer the truth than the "family tree" theory.'*¹⁴

This wave theory has no parallel in biological evolution, since living creatures do not pass on acquired modifications to other living creatures near them in such waves. So we see immediately a major problem with Pen-

Table 2. Examples demonstrating Grimm’s Law.

Latin	English	Latin	English
p- pater piscus ped- plenus	f- father fish foot full	f- fag- fer- fract- frater	b- beech bear break brother
g- gelidus genu gen- gnos-	c-/k- cold knee kin know	c- can- capit- casa (hut) cord-	h- hound head house heart
d- decem dent- domus (house) duo	t- ten tooth timber two	t- tenu- torr- (parched) tres tu	th- thin thirst three thou

nock’s proposed comparison.

Note that even if the family tree diagram happened to represent an accurate picture of the development of the IE languages, it would not necessarily represent the physical descent of the speakers of these languages accurately. Many peoples have adopted another language (e.g. the Normans¹⁵). Also, a huge number of people around the world whose native language is English do not have predominantly Anglo-Saxon ancestry.

Whatever the correct details of the origin of all the IE languages may be, the enormous number of related words and morphological similarities still show that all of these languages must have some form of common descent.¹⁶

Phonetic transformations

This section examines some of the many known phonetic transformations (sound changes) which have occurred within the IE languages, and the relevant implications. These transformations are amongst the most important changes which have created significant differences between related languages.

The **Germanic**¹⁷ languages are widely presumed to have descended from the so-called **Proto-Germanic** language. English is a West Germanic language, which means that all its basic vocabulary and grammar have descended from Proto-Germanic. The famous **Grimm’s Law** (or the **First Germanic Sound Shift**) was first described in 1818 by the Dane Erasmus Rask, and then formalized in 1822 by the German Jacob Grimm (of fairytale fame). This law explains how the consonants of the whole Germanic group consistently shifted from those of PIE. This transformation occurred more than two thousand years ago. Table 2 gives a simplified presentation of some of the consonantal shifts which oc-

curred, using Latin and English words. Latin words approximately represent the original PIE consonants, while English cognates¹⁸ approximately represent the consonants of Proto-Germanic.¹⁹ It is very important to understand that these English words have not descended from Latin (or vice versa), but that the members of each pair of words share a common source. Indeed, the fact that a shifting has occurred, shows that the English words have not been directly borrowed from Latin.

The dialects of the German language can be divided into two groups according to the geography of Germany: *Low*, in the low-lying plains of the north, and *High* in the higher land of the centre and south. The effects of the shift described by Grimm’s Law were present in all the German dialects. But within the approximate period AD 500–700,²⁰ most of the consonants of the High German dialects again shifted consistently, the change having arisen ‘in the south in the alpine area, presumably as the result of contact with speakers of other languages’.²¹ This is called the **High German Sound Shift** (or the **Second Germanic Sound Shift**).

High German later spread its influence to become Modern Standard German (with Luther’s Bible translation playing a significant role). The Low German dialects, as well as Dutch and English, did not undergo this shift. Table 3 demonstrates the shift by listing some modern West Germanic words. The consonants of English and Dutch clearly match, while the German consonants have shifted consistently.

During the **Great Vowel Shift** of English, which occurred between about AD 1400 and 1600, the long vowels of English shifted to their current pronunciation in England. This is why the long vowels in *la*, *len* and *lin* are now pronounced in English approximately as in *lay*, *lean* and *line*, respectively, while in most Continental European languages these are still pronounced approximately as in *lah*, *lane* and *lean*, respectively.

Table 3. Examples demonstrating the High German Shift.

English	Dutch	German	English	Dutch	German
d- do drag drink dream	d- doen dragen drinken dromen	t- tun tragen trinken träumen	t- ten tongue tooth two	t- tien tong tand twee	z- zehn Zunge Zahn zwei
-t- bite eat hate let	-t- bijten eten haten laten	-ss- beissen essen hassen lassen	-p- help hope sleep ape	-p- helpen hopen slapen aap	-f- helfen hoffen schlafen Affe
-k- break make speak stroke	-k- breken maken spreken strijken	-ch- brechen machen sprechen streichen	p- pipe pepper plough pound	p- pijp peper ploegen pond	Pf- Pfeife Pfeffer Pflügen Pfund

Simplification of inflexions

Table 4. Some Latin words with their Romance derivatives.

Latin	Meaning	French	Italian	Spanish
c- castellum capra capillus	castle she-goat hair	ch- chateau chèvre cheveu	c- castello capra capello	c- castillo cabra cabello
f- filius filia facire	son daughter do/make	f- fils fille faire	f- figlio figlia fare	h- hijo hija hacer
pl- planus plaga plenus	flat wound full	pl- plan plaie plein	pi- piano piaga pieno	ll- llano llaga lleno

The spoken form of Latin which was widespread in the Roman Empire is known as **Vulgar Latin**, which differed from the literary **Classical Latin** in that many slang words were used and the word endings were simplified. After the fall of the Roman Empire, the dialects of Vulgar Latin developed to become the separate **Romance languages**²² and once again, the phonetic divergence involved consistent patterns of shifting. Table 4 lists some Latin words and their French, Italian and Spanish derivatives, showing just a few of the shifts.

Many other laws for phonetic transformations within the IE languages have been developed, and one book indeed lists 41 phonetic laws for IE languages!²³ These transformations have led, in fact, to some of the most distinguishing characteristics of the different branches of the IE family (e.g. the ‘soft’ palatalized consonants in the Slavic languages).

A different kind of divergence occurs when the accentuation of words changes. The Classical Latin demonstrative pronoun *ille, illa, illud* (‘that’) developed to become the definite article (‘the’) in the Romance forms. The different forms have arisen from the way the Latin words were accented in the different regions. For example, in the case of the Latin *ille* (‘that’, masc.), the French *le* came from the second syllable while the Italian *il* and the Spanish *el* came from the first syllable.

All these transformations cannot increase the inherent complexity of a language. If distinct sounds are merged or sounds are dropped, then simplification occurs. The reasons why such shifts have occurred are not always clear, but it is certain that they have happened often, in relatively short times (about 200 years each for the Great Vowel and High German shifts), and the number of speakers does not have to be small. This shows that it is quite plausible that earlier divergences from PIE happened easily and rather quickly. Also, one key evolutionary idea is that major change is a result of haphazard naturalistic processes, and Pennock compares natural language to a ‘jerry-built jumble’.²⁴ But phonetic shifting is a major process which is unconscious and undesigned, yet is still very regular.

A universally observed phenomenon of all language families is that inflexional morphology¹⁰ has simplified over time. The history of the IE family overwhelmingly illustrates this. Theoretical reconstruction suggests that PIE had three genders, eight noun cases, and three verbal aspects.²⁵ The evolutionary model is at a complete loss to explain why or how the complicated case system of PIE came into being. In this section, we will examine various simplifications which have occurred, and their causes.

Synthetic languages are those in which several grammatical units tend to be composed into one word, and inflexions (word endings) are used to indicate the grammatical relationships between the words. For example, Classical Greek, Classical Latin, and the ancient Indian language Sanskrit are all synthetic. In contrast, **analytic** languages are those in which each basic grammatical unit is usually expressed by a single word, and word order is very important for the conveying of the meaning.²⁶ Modern English is very analytic, so in the clause ‘the boy loves the girl’, for example, swapping the two nouns would change the meaning of the sentence completely.

Over time, synthetic languages have become more analytic, with the effect that inflexional morphology has repeatedly been simplified.

‘Fixed word-order began to appear within the inflected languages simply as a result of growing orderliness of thought.’²⁷ Relating particles were at the same time added to inflected words wherever the inflexional meaning was vague. After word-order had acquired functional value, and the more precise relating-words were current, related endings lost their importance, and would become assimilated, slurred, and dropped, from the natural tendency of speakers to trouble themselves over no more speech-material than is needed to convey their thought.’²⁸

The very free word-order found in Classical Latin and Greek literature (in which related words in a sentence can be separated by a long distance!) is very artificial. It is widely believed that the word-order used in speech, even during the Classical period, was rather close to that of modern analytic languages. *‘We do not know the exact nature of the word-order which Cicero used when bawling out to his slave; but there can be little doubt that it was as fixed as that of colloquial Italian.’²⁹*

Another cause of language simplification is the tendency to drop inflexions to facilitate communication when two peoples speaking similar languages mix. Anyone who has tried to speak a foreign language (or hears a foreigner speak their own language) knows that the word endings are the most easily confused or omitted elements of the words. The earliest form of English, known as **Old English** or **Anglo-Saxon** (c. AD 450–1150), was highly inflected, with three genders and several cases. Within the approximate period

AD 800–1000, there were many Scandinavian invasions into England, and for a while most of NE England was ruled by Danes and this area was known as the ‘Danelaw’. The language spoken by the invaders is known as **Old Norse** (from which modern Danish, Swedish, etc. have descended), and was similar to Old English in many ways, being also a Germanic language. Because of the mixing of these peoples whose languages had similarities, the inflexions of Old English were worn down.³⁰

This shows that language change can happen rather quickly under certain external social conditions, and greater simplification results from greater interaction. In contrast, isolated languages seem to simplify more slowly. For example, the Icelandic language is still very inflected (with four cases) and has changed little since the Old Norse of c. 900 AD, because of the isolation of its speakers.³¹ This is the **opposite** of what is proposed for biological evolution: ‘... from what we know of evolutionary mechanisms, speciation events are likely to occur in isolated populations, and competition will quickly eliminate the less fit of closely similar forms.’³²

The many inflexions of PIE have only simplified or disappeared in its descendants. For example, counting numbers of cases, Classical Latin had six, Modern German has four, and the Romance languages have none. The only noun inflexion preserved in Modern English is the possessive ending ‘s’ which is a survival of the common Germanic masculine singular genitive case ending.³³ This was the chief way of expressing possession in Old English, so the Old English version of Matthew 12:42 (with modernized words) is ‘*Southland’s queen ... came from earth’s ends to hear Solomon’s wisdom*’.³⁴ The alternative analytic possessive construction *the queen of the South*, etc. is thought to have arisen in English through French influence.³⁵ For the verse just quoted, Wycliffe already uses ‘of’ forms in his 14th-century English translation of the Bible.

The grammatical gender of nouns has been completely eliminated from English. The Romance languages have lost the Classical Latin neuter gender, while Dutch, Danish and Swedish have merged masculine and feminine to form the common gender.

In summary, natural processes have only caused languages to become more analytic over time and caused inflexional morphology to be simplified. English grammar is the greatest example of the effects of these processes. All evidence strongly suggests that there was a complex beginning for the language families of the world (not just for the IE family, in fact). Thus the evolutionary model has an enormous problem in that it postulates a gradual transition from simple to complex, yet the observed processes are always going the wrong way.

The following three sections examine the main ways that languages have grown, and show that these are certainly not the product of naturalistic processes.

Word formation

Word formation is a very common way of creating new words within a language. The two main kinds of word formation are **compounding**, which involves joining simple words together (e.g. ‘sun-light’, ‘up-right’), and **derivation**, which involves adding affixes (prefixes, suffixes or infixes) to existing words (e.g. ‘e-volu-t-ion’).

Compounds seem to have always been a significant feature of IE languages. Compounds like ‘whitehouse’ were apparently even a common feature of PIE.³⁶

The multitude of compounds and derivatives in English is amazing. The native Germanic root *bear* has given over 40 derivatives in English and the Latin root *ced/cess-* (meaning ‘to go’) has given over 80 derivatives (mostly borrowed from Latin). ‘*We share with French our most elaborate derivative in-com-pre-hen-s-ib-il-it-y, with its root “hen” and its eight affixes and infixes.*’³⁷ The invention of new compounds continues in modern times. Philosophers indulge in such specimens as ‘*the in-ness of a one-ship which fills the us-dom with anti-ty*’.³⁸

As one writer has pointed out,³⁹ English has become very analytic in its grammar but very synthetic in its vocabulary because of the abundance of compounds and derivatives! That is, the internal structure of the words themselves is complex, and is certainly the product of much human intelligence and design, not naturalistic processes.

Semantic modification

Another very important way in which a language grows is by semantic modification of existing words. The meanings of most words in many languages have changed greatly during their history.

Narrowing of meaning has often occurred. For example, the English word ‘starve’ was the usual general word for ‘to die’ in Old English but was displaced by the Scandinavian word ‘die’; thenceforth ‘starve’ narrowed its meaning. Similarly, the English word ‘deer’ was originally the general word for ‘animal’.⁴⁰

Abstract words form the bulk of the vocabulary of major modern languages like English. Although languages have several native words which express simple abstract concepts literally (e.g. the native Germanic English words ‘love’, ‘live’, ‘feel’, ‘think’), the most common way of forming abstract words is by **metaphorical extension** of existing words.

The renowned English etymologist Ernest Weekley wrote:

‘Every expression which we employ, apart from those that are connected with the most rudimentary objects and actions, is a metaphor, though the original meaning has been dulled by constant use. Thus, in the above sentence, expression means what is “squeezed out”, to employ is to “twine in” like a basket-maker, to connect is to “weave together”,

*rudimentary means “in the rough state”, and an object is something “thrown in our way”.*⁴¹

Note that all of the words just listed were borrowed into English from Latin (some through French) and they already had their metaphorical senses in Latin — no change of meaning occurred in the borrowing.

By the use of such abstract compounds, Greek and Latin were developed to great complexity of expression. There is hardly an abstract concept or thought which cannot be expressed clearly in these classical languages — much philosophical writing was in Greek. A similar phenomenon occurred in Old English, in which very many abstract words were formed by compounds of native Germanic words, instead of by borrowings from Latin.⁴²

Compound abstracts involve two design aspects: the construction of the compound, and the semantic extension to a metaphor. The metaphorical senses were obviously originally designed consciously (though naturally), so human intelligence has played a significant part.

Slang mostly consists of colloquial metaphor. A very large number of slang words in Vulgar Latin became the proper word for a common object in the Romance languages. A popular example is the Classical Latin word *testa* which meant an earthenware pot.⁴³ In Vulgar Latin *testa* became a slang word for ‘head’ and finally became the normal word for ‘head’ in French, now spelt *tête*.⁴⁴ Yet again, the development of slang meanings is a result of human intelligence (often subtle or sarcastic). The later transition of a word from a slang meaning to a formal meaning may not be very conscious, but the initial slang senses of words are used quite deliberately.

A final illustration of the huge number of semantic extensions which have occurred in English is the word ‘stock’. The *Oxford English Dictionary* gives 65 different meanings of this word (with very many sub-senses)!

In summary, the great growth by semantic extension of existing words is obviously a product of human intelligence alone.

Borrowings

A major theme of this paper which cannot be overemphasized is that borrowing has played a huge role in the growth of the major IE languages. In this section we will briefly examine some important kinds of borrowings which have taken place in history. Once again, these all involve conscious and intelligent input.

English supplies the greatest example of large-scale borrowing. As a result of the Scandinavian invasions mentioned earlier, English borrowed a large number of Old Norse words.⁴⁵ But the Scandinavian influence on English is small compared with the French influence. For almost three centuries after the Norman Conquest of England, two languages were spoken in England: French at the court and in the upper classes, and English by the common people. All the kings of England in this period spoke French as their

first language! Many people were bilingual, and English consequently borrowed a huge number of French words.

The next stage in English borrowing consists of the very interesting ‘learned’ borrowings. The Romance languages lost the bulk of the Latin abstract words when society went into the Dark Ages. The mediaeval vernacular languages (such as the various dialects of English, French and German at that time) lacked the necessary vocabulary for discussion of abstract questions (e.g. in theology), so Latin was used predominantly.

However, towards the end of the Middle Ages, writers started to borrow abstract words from Latin into their respective vernacular languages (and later from Greek, particularly for scientific and medical terms). After a while the vernacular languages were enlarged greatly by such ‘learned’ borrowings on a massive scale, though many writers still used Latin because they had a contempt for the ‘Latinization’ of the vernacular languages.⁴⁶

The entry of these Latin words is sometimes called **learned transmission**. The ‘native’ words in the Romance languages have descended naturally from Vulgar Latin by **popular transmission**, which involves the particular phonetic shifts peculiar to each Romance language.⁴⁷ But *‘in contrast to popular transmission, learned transmission is instantaneous, voluntary, and modifies the orthography and pronunciation of the Latin word as minimally as possible.’*⁴⁸

Doublets are two words from the same source which enter a language in different forms at different times. Each of the Romance languages has a large number of doublets, because the one Latin word has descended naturally by popular transmission, and then entered again later by learned transmission. As English has borrowed many French words and also their Latin originals, English has many of these Romance doublets, some of which are shown in Table 5.

One can view the vocabulary of English as consisting very roughly of several ‘strata’:

1. West Germanic native words,
2. Scandinavian and then
3. French words from the successive invasions,⁴⁹
4. learned Latin and Greek words, and finally
5. modern borrowings from areas all round the world.

A very significant fact is that the Latin words in the learned stratum are in an older form than their popularly transmitted French derivatives, which are in the stratum below! Similar layering structures occur in other modern IE languages. This emphasizes that the picture of language history is very complex and not like a simple family tree with gradual divergence along separating lines.

A **calque**⁵⁰ or **loan-translation** is a borrowing of a compound word from another language where each component is translated into native words and then joined together. While English and the Romance languages have borrowed most Latin words in their original form more or less, some other languages abound with calques, of which German is a prime example.⁵¹ Table 6 lists some German

Table 5. English doublets of French/Latin origin.

French Origin	Latin Origin	French Origin	Latin Origin	French Origin	Latin Origin
chamber	camera	frail	fragile	reason	ration
chance	cadence	jealous	zealous	royal	regal
chieftain	captain	loyal	legal	rule	regulate
count	compute	poor	pauper	strait	strict
dainty	dignity	prison	(ap)prehension	strange	extraneous
dungeon	dominion	prove	probe	treason	tradition
esteem	estimate	ray	radius	(a)venge	vindicate

compounds and gives the literal meanings of their components and their English translations, which themselves are borrowings from Latin. For these English words the Latin components match the German components exactly in meaning. Similar calques occur in many other languages, including many in Classical Latin, derived from Classical Greek. All these calques emphasize the large role which intelligent design has played in the history of languages — calques obviously involve even more conscious design than direct borrowings.

Note that significant borrowing from Latin had already occurred long before the period of learned borrowings. For example, early Germanic tribes borrowed Latin words extensively from the Romans because of trade and similar kinds of contact. As a result, the German language has a surprisingly large number of very ‘German-looking’ words which happen to be Latin words borrowed **early** and which later underwent the High German Shift⁵² (and must be distinguished from later learned borrowings and calques). One author lists 89 such German words which were borrowed in this early period from the Romans!⁵³

Since the Middle Ages, there has also been large-scale borrowing into the major IE languages from many languages around the world, not just from other European languages. Borrowing also follows cultural development closely: most musical terms have been borrowed from Italian into all languages, while several shipping words have been borrowed from Dutch into English,⁵⁴ as the Dutch were masters of sailing.

In summary, extremely few words are coined anew, without being based on something previously existing.⁵⁵ All the major IE languages in Europe grew enormously in their size and scope by borrowing from Latin and Greek (whether literally or through calques), and this growth was parallel to the great cultural developments during the Renaissance and the Reformation. That is, this massive growth was a product of intelligent input alone, and was certainly not a result of gradual naturalistic development within each language independently.

Loss of vocabulary

Loss of vocabulary has often occurred within languages. ‘A large proportion of the rich Old English vocabulary is

gone [from Modern English]. Estimates vary; most assume that between 65 percent and 85 percent of the Old English lexicon has been lost since Old English times.’⁵⁶ The massive replacement of Classical Latin words by slang equivalents in Vulgar Latin, which became permanent in the Romance languages, is another example of a great loss.

Loss of vocabulary may seem to be like natural selection, but is only a **loss**. Also, many of the causes of loss are not due to ‘utilitarian fitness’ (as postulated by biological evolution). Some of these causes are: abrupt displacement by the language of invaders, one synonym gaining the ascendancy over others, and changes in culture or fashion.

Intermediate forms

Creationists have repeatedly criticized the theory of evolution because of the lack of intermediate fossil forms. Pennock claims that intermediate forms have been extensively inferred within language families so that, by analogy, theoretical inference of intermediate forms is reasonable within biological evolution.⁵⁷

However, very large numbers of intermediate forms have actually been found for earlier forms of languages such as the Romance and Germanic languages (from inscriptions and written records), and this has been a huge factor in the construction of the early histories of these languages.⁵⁸ On the other hand, the etymologies of very many words are still disputed. Unless the history of a word’s spellings and uses is well documented, or good regular phonetic laws are shown to apply, etymology is just guesswork.⁵⁹

Furthermore, there is a much greater objection to this supposed analogy. Even the greatest change of one word to another involves only a small number of letters, so postulated intermediate words hardly differ from the known words. Yet the intermediate forms which have been proposed for biological evolution bridge enormous gaps and

Table 6. German calques from Latin

German	Literal Meaning	Linate English
an-ziehen	on-draw	at-tract
aus-schliessen	out-close	ex-clude
über-leben	over-live	sur-vive (French)
voran-gehen	before-go	pre-cede
wider-sprechen	against-speak	contra-dict
Aus-druck	out-pressing	ex-pression
Aus-nahme	out-taking	ex-ception
Um-stand	around-standing	circum-stance
Zu-fall	unto-fall	ac-cident

involve millions of items of change at the biochemical level, so the comparison is unfair.

The speed of language change

This section briefly examines some of the factors involved in the speed of language change. The use of writing and the consequent literacy of a people greatly retards language change. Political factors have often caused one dialect to dominate an area and then become a more stable standard language. The standardization of spelling and pronunciation, and its enforcement in education, also reduces change. It is hard to appreciate how greatly pronunciation has changed in rather short periods. The Great Vowel Shift of English mentioned above, which took about 200 years, changed English so much that the English spoken before the shift would be incomprehensible to most of us. The High German Shift also took only about 200 years.

One author writes:

*'Today many linguists are quite aware that linguistic change has not always proceeded at a glacial pace. In preliterate societies, language may change rather rapidly: literature has a conservative influence upon both the vocabulary and grammar, and a people without literature might be relatively uninhibited in its linguistic innovation. Arabic, for example, has changed less in thirteen hundred years than some nonliterary languages have changed in the last two centuries. It is quite certain that the rate of linguistic change for Greek was far more rapid before Homer's time than after.'*⁶⁰

We thus see that because of the lack of the various stabilizing influences in the earlier periods, it is very reasonable to suppose that the IE language family has developed since Babel to its present state within the biblical range of about four thousand years.

In fact, there is a very great problem here for evolutionary chronology: it is impossible that the highly inflected PIE could have been spoken for many thousands of years without change, so its origin cannot be more than a small number of thousands of years ago. Thus, how did it suddenly arise with all its complexity? To suggest that it arose by gradual increase in complexity is utterly against the evidence, as noted in the section on simplification of inflexions. In contrast, it is reasonable to suggest that the original morphological complexity of languages like PIE was divinely designed at the Tower of Babel.

Finally, we can easily see the many flaws in the following statement of the Christian astronomer John Herschel in 1837, which Pennock gleefully quotes with approval:

'Words are to the Anthropologist what rolled pebbles are to the Geologist — battered relics of past ages often containing within them indelible records capable of intelligent interpretation — and when we see what [little] amount of change 2,000

*years has been able to produce in the languages of Greece and Italy or 1,000 in those of Germany, France & Spain we naturally begin to ask how long a period must have lapsed since the Chinese, the Hebrew, the Delaware ... had a point in common with the German & Italian & each other. — Time! Time! Time! — we must not impugn the Scripture Chronology, but we must interpret it in accordance with whatever shall appear on fair enquiry to be the truth for there cannot be two truths.'*⁶¹

Indeed, we must not, and need not, impugn the Scripture chronology, nor apply some liberal interpretation to it! These specified periods of years have produced **vast** amounts of changes in these languages! As we have also seen, very many words we use daily are not 'battered relics' but have been carefully constructed or borrowed according to various patterns. In fact, because of spelling reforms, the actual forms of most words we now use are only a few hundred years old! Furthermore, selecting two of these languages belonging to different families, there is no evidence that there ever was a common origin of German and Hebrew!⁶²

Conclusion

We have seen that in languages there has been a great 'downhill' simplification in inflexions, etc. by natural processes, while the huge 'uphill' growth of languages in their vocabulary and expressiveness has only come about through intelligent human input. These kinds of change are quite different to the processes proposed by biological evolution, so any analogy is completely unfounded.

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References

1. See Alter, S.G., *Darwinism and the Linguistic Image*, The Johns Hopkins University Press, Baltimore, 1999, for many relevant quotes of Lyell and Darwin.
2. Pennock, R.T., *Tower of Babel: The Evidence Against the New Creationism*, MIT Press, Cambridge MA, USA, 1999.
3. Pennock, Ref. 2, p. 159.
4. Pennock, Ref. 2, p. 132.
5. Pennock, Ref. 2, p. 146.
6. For accessible introductions and more information concerning many of the topics discussed in this paper, see for example: Baugh, A.C., *A History of the English Language*, Routledge and Kegan, London, 1959, or Barber, C., *The English Language: A Historical Introduction*, Cambridge University Press, Cambridge, 1993. Both books give good overviews of the Indo-European language family in general, not just the English language.
7. See Taylor, C.V., The origin of language, *CEN Tech. J.* **11**(1):76–81, 1997.

8. A **borrowing** is the taking of a word or phrase from one language into another, often with some modification. The term is metaphorical of course, since the borrowed item is not returned!
9. Indo-European is so named because it contains languages which are spoken in areas ranging from India to Europe. The major European languages which are not Indo-European are: Basque, Estonian, Finnish and Hungarian.
10. **Morphology** is the study of the structure of words, and can be divided into **inflexional morphology**, which deals with **inflexions** (word endings), and **lexical morphology** which deals with word-formation.
11. Table 1 is derived from Bodmer, F., *The Loom of Language*, Merlin Press, London, p. 189, 1987.
12. **Dialects** are usually defined to be different forms of a language which are mutually comprehensible.
13. Millward, C., *A Biography of the English Language*, Holt, Rinehart and Winston, New York, p. 368, 1988.
14. Walshe, M.O'C., *A Concise German Etymological Dictionary*, Routledge & Kegan, London, p. xiii, 1951.
15. The Normans ('Norse-men') were Scandinavians who invaded northwestern France in the ninth and tenth centuries AD and, after settling in this area (which thenceforth was named Normandy), they completely adopted the French language, religion and culture. They later conquered England at the Battle of Hastings in 1066, and so introduced an enormous French influence on the English language.
16. Note that the various theories concerning the so-called Indo-European people (involving archaeology, etc.) are completely outside the purpose of this paper and will not be discussed.
17. See Figure 1 for the major members of the **Germanic** (or **Teutonic**) group. This should not be confused with the **German** language, which is just one particular language within the group.
18. A **cognate** is a word sharing a common origin with some corresponding word in another language (like cousins), but is **not** a borrowing from the other language.
19. The meaning of a Latin word is placed in parentheses if, and only if, it is not exactly the same as the English meaning.
20. See Waterman, J.T., *A History of the German Language*, University of Washington Press, Seattle, pp. 59–62, 1966, for discussion; it is difficult to determine exact dates.
21. Lockwood, W.B., *An Informal History of the German Language*, Andre Deutsch, London, p. 51, 1965. Lockwood suggests that the pre-Germanic inhabitants of the alpine area spoke Vulgar Latin (see below) until the fall of the Roman Empire, and then adopted the Germanic speech of their conquerors but with their own phonetic habits, and this produced the shift which then spread.
22. The major Romance languages are: French, Italian, Portuguese, Romanian and Spanish. The term 'Romance' of course comes from the fact that these languages all arose in regions within the former Roman Empire.
23. Collinge, N.E., *The Laws of Indo-European*, John Benjamins Publishing Company, Amsterdam/Philadelphia, 1985.
24. Pennock, Ref. 2, p. 146.
25. The cases are: nominative, accusative, genitive, dative, locative, ablative, instrumental and vocative, while the verbal aspects are: imperfective, perfective, and stative. See *The New Encyclopaedia Britannica*, 15th Ed., Encyclopaedia Britannica, Inc., Chicago, Vol. 22, pp. 586–587, 1993.
26. Etymologically, *ana-lytic* is Greek for 'loosed up, dissolved' and *syn-thetic* is Greek for 'set together, connected'.
27. Note the reference to intelligent thought here — AKS.
28. Sheffield, A.D., 'Grammar and Thinking', as quoted in Bodmer, Ref. 11, p. 325.
29. Bodmer, Ref. 11, p. 324.
30. See Baugh, Ref. 6, pp. 122–123, 1959, for further discussion.
31. The Icelanders have always been a very literate people with a long literary tradition, so this has also contributed significantly to the stability of Icelandic.
32. Pennock, Ref. 2, p. 153.
33. The popular idea that the expression 'John's book' is a contraction of 'John his book' is completely false. The inflexion has also extended from being used only for masculine singular to being used for any gender and for either singular or plural.
34. See Liuzza, R.M. (ed.), *The Old English Version of the Gospels*, Oxford University Press, Oxford, p. 26, 1994, for the original text.
35. Weekley, E., *The English Language*, Andre Deutsch, London, p. 41, 1952.
36. McArthur, T. (ed.), *The Oxford Companion to the English Language*, Oxford University Press, Oxford, p. 513, 1992.
37. Potter, S., *Our Language*, Pelican, London, p. 88, 1950.
38. Bodmer, Ref. 11, p. 465.
39. Potter, Ref. 37, p. 87.
40. Compare 'starve' with Dutch *sterven* and German *sterben* ('die') and compare 'deer' with Dutch *dier* and German *Tier* ('animal') — these languages preserve the original meaning. Conversely, English 'clean' and Dutch/German *klein* have the same origin, but English preserves the original meaning 'clear' more or less, while Dutch and German have developed the meaning to 'neat', 'delicate' and finally to 'small'.
41. Weekley, E., *The Romance of Words*, Guild Books, London, p. 86, 1949.
42. See Cooper, B., *After the Flood*, New Wine Press, Chichester, pp. 150–160, 1995, for a sample of the richly expressive Old English compounds found in the poem *Beowulf* (for example, *ban-hus*, literally 'bone-house', meaning 'body').
43. The word *testa* was later borrowed into English via Old French, to yield the idea of a vessel for chemical treatment (cf. the tautological 'test-tube') and then extended to the general verb 'test' meaning 'to try or put to proof'.
44. As a curious parallel, the modern German word for head, *Kopf*, is derived (following the phonetic rules of the High German Shift) from the Latin *cuppa* meaning 'cup' — a very similar slang usage!
45. Some examples of these are: *fellow, husband, skin, ill, egg, take* and *want*. The pronouns *they, them* and *their* were also borrowed and replaced the native Old English forms.
46. Even today we see a tendency to use Latinate words (by politicians and journalists, for example) where native English words would be quite adequate.
47. All the Romance words listed in Table 4 are a result of popular transmission from Vulgar Latin.
48. Bouffartigue, J. and Delrieu, A.-M., *Trésors des racines latines*, Belin, Paris, p. 12, 1981 (my translation).
49. There are in fact two kinds of French borrowings in English, some according to the northern Norman and Picardy dialects, and others according to the Central (Paris) dialect, yielding further doublets in English such as *canal/channel, catch/chase, ward/guard, reward/regard, warranty/guarantee*.
50. **Calque** is itself a borrowing from French, literally meaning 'copy'.
51. Note that German has still borrowed very many Latin words literally and appended the *-ieren* suffix to indicate the foreign origin (e.g. *dokumentieren*).
52. For example, German *Kampf* ('fight, struggle') comes from Latin *campus* ('plain', thus 'place where battle is held'); the change of *p* to *pf* occurred later as a result of the High German Shift.
53. Keller, R.E., *The German Language*, Faber and Faber, London, p. 125,

- 1978.
54. For example: *boom, deck, dock, skipper, yacht*.
 55. The main exceptions are **echoic** words such as ‘moo’ or ‘miaow’ which approximate a sound (often poorly!), and these can differ greatly even between languages which are closely related.
 56. Millward, Ref. 13, p. 104.
 57. Pennock, Ref. 2, pp. 152–153.
 58. For example, graffiti found at Pompeii and tomb inscriptions from the time of the Roman Empire have helped to formulate the phonetic changes which must have happened to yield the various Romance Languages.
 59. See *Ernest Weekley's Threefold Etymology Test* at the Etymological website *Take Our Word For It*, <<http://www.takeourword.com/glossary.html>>, March 27, 2000.
 60. Drews, R., *The Coming of the Greeks*, Princeton University Press, Princeton, p. 37, 1988.
 61. Quoted in Pennock, Ref. 2, p. 132. The word ‘[little]’ is inserted by Pennock himself in his quotation.
 62. Hebrew belongs to the Semitic family and there is no convincing evidence that the Indo-European and Semitic families share a common source.
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