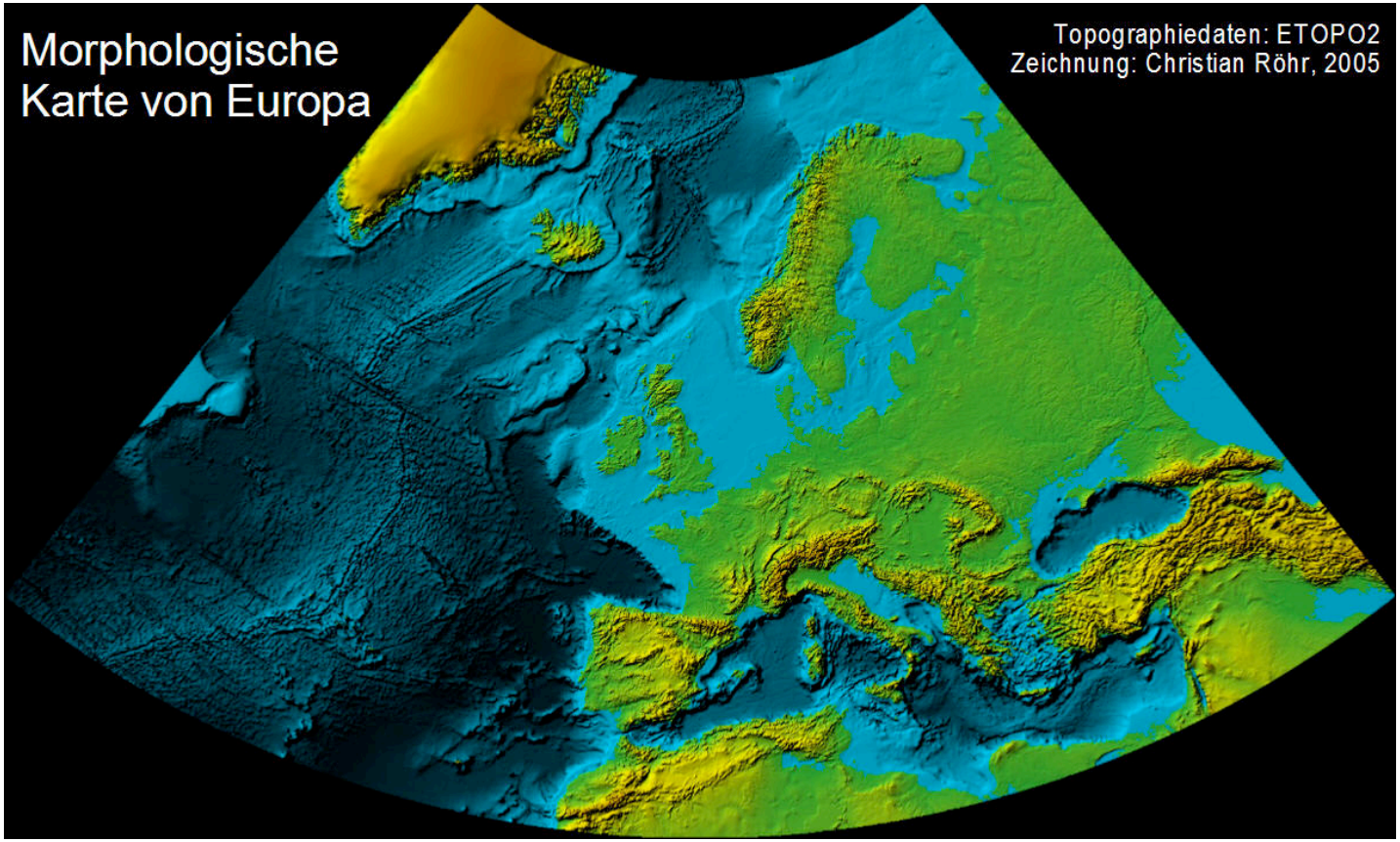
9. Morphological Typology



http://www.oberrheingraben.de/Geophysik/Erdbeben.htm

For maps of the **linguistic** morphology of Europe and elsewhere see http://wals.info/
or, previously, the atlas accompanying P. Wilhelm Schmidt's *Die Sprachfamilien und Sprachenkreise der Erde* (1926)

Typology is that branch of linguistics which is especially concerned with linguistic **diversity** and **unity**. The expectation (some would say realistic, others optimistic) is that diversity is not random and unlimited, because linguistic structures are subject to laws or law-like constraints (= universals). However, unity and patterns of diversity are difficult to establish empirically, and constraints on diversity, once established, are difficult to explain. The typological research programme is one of the major challenges of linguistics.

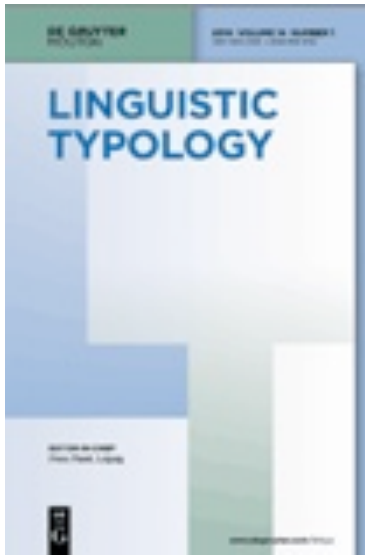
Morphology has for centuries been at the centre of the typology.
Here we are introducing a **quantitative** (Chapter 9.1) and a **qualitative** dimension (Chapter 9.2) of morphological typology.

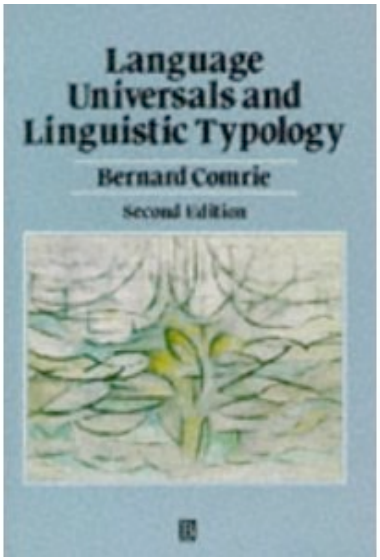
For more in this area see the bibliography “Themes in Typology” and other materials on my homepage (http://ling.uni-konstanz.de/pages/home/plank/).

Among the numerous textbooks I especially recommend the morphology chapter in Bernard Comrie’s *Language Universals and Linguistic Typology* (^{2}1989).

For current research read the journal *Linguistic Typology* (online at http://www.degruyter.com/view/j/lity).

For morphological and other (alleged) universals browse or search:
THE UNIVERSALS ARCHIVE, http://typo.uni-konstanz.de/archive/intro/index.php





9.1. ANALYTIC — SYNTHETIC

On the **quantitative** side, the question is to what extent languages have morphology.

It seems safe to extrapolate that all languages (spoken as well as sign languages) have morphology, minimally in the shape of word formation and in particular compounding. Reduplication is the overt form of morphology that is most likely to be universal, followed by suffixation.

But then there are huge quantitative differences. As to compounding, some languages have many and internally very complex compounds, other languages use compounding less productively and their compounds are less complex.

German likes compounding (though not reduplication), and so do Mandarin Chinese or Vietnamese. English is in this group, too, although here the line between compounds and syntactic constructions (phrases) is harder to draw.

The basic idea of quantitative morphological typology is that languages as a whole can be ordered in this dimension:

ANALYTIC ---------- SYNTHETIC ---------- POLYSYNTHETIC
(a.k.a. ISOLATING) (a.k.a. INCORPORATING)

Analytic languages have little morphology (compounding and perhaps reduplication and some further word formation seems the minimum that all languages have), **synthetic** languages have much morphology, and **polysynthetic** languages have even more morphology (typically clustering around the verb, with the verb as the core of the clause "incorporating" much that analytic languages would express as separate syntactic parts of clauses).

Don't blame me for the terminology, blame them:

Adam Smith (1723–90)

Peter Stephen Duponceau (1760–1844)

9.1.1. "Little" and "much" in these overall typological characterisations seem rather vague quantifiers. However, there are ways of being more precise about the extent to which languages have morphology.

One approach is to calculate the average ratio of numbers of morph(eme)s to numbers of words in representative texts of a language:

> The higher the ratio, the more synthetic the language,
> and the lower, the more analytic.

Being synthetic or analytic thus is a **continuum**, not an either-or distinction, and the position of a language on this continuum is defined through its average ratio of morphemes to words.
(Establishing what is the **average** for a language is one challenge here, though.)

Latin will serve as an example of a language sitting squarely on the synthetic side of the continuum (which also goes to show how much depends here on one's morphological and syntactic analyses):

domin-u-s	*am-a-t*	*ancill-a-s*	*pulchr-a-s*
master-THEME-NOM.SG	love-THEME-3SG.PRES.IND.ACT	maid-THEME-ACC.PL	beautiful-THEME-ACC.PL

'(the/a) master loves (the) beautiful maids.'

On this (plausible) analysis there are 12 morphemes and 4 (morphological-syntactic-lexical) words; syntheticity quotient therefore 12 : 4 = **3**

– for this sentence, and let's hope it is a sentence typical of Latin as a whole!

(Analyse some others.)

Compare with the **English** translation equivalent (assuming both Latin noun phrases are intended as definite):

the	*master*	*love-s*	*the*	*beauti-ful*	*maid-s*
DEF	master	love-3SG.PRES.IND	DEF	beauty-ADJCT	maid-PL

9 morphemes : 6 (morphological-syntactic-lexical) words = syntheticity quotient **1.5**
– which is lower than that of Latin and rather close to the minimum value of 1.0, analyticity.

If the definite article is analysed as morphologically complex, *th-e* DEF-ART, then the figures are slightly different: 11 : 6 = **1.83**, which is still lower than the result Latin – which confirms the general impression that English has less morphology than Latin.

Which in turn needs to be confirmed by more extensive text counts.

A good text to begin with the counting, and once again to practise morphological analysis, is the *Universal Declaration of Human Rights*, because it is available in lots of languages, including two alternative Latin translations (the *Lord's Prayer* used to be the favourite parallel text):

Omnes homines dignitate et iure liberi et pares nascuntur,
rationis et conscientiae participes sunt, quibus inter se concordiae studio est agendum.

http://www.ohchr.org/EN/UDHR/Pages/Language.aspx?LangID=ltn

Omnes homines liberi aequique dignitate atque juribus nascuntur.
Ratione conscientiaque praediti sunt et alii erga alios cum fraternitate se gerere debent.

http://www.ohchr.org/EN/UDHR/Pages/Language.aspx?LangID=ltn1

All human beings are born free and equal in dignity and rights.
They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.

http://www.ohchr.org/EN/UDHR/Pages/Language.aspx?LangID=eng

To illustrate quantitative morphological typology, here are some further languages.

Vietnamese comes close to being the prototype of an analytic language (syntheticity quotient close to 1);

Turkish is quite synthetic, though in a qualitatively different way from Latin (see below);

West Greenlandic Eskimo is prototypically polysynthetic (with a syntheticity quotient much higher than that of Latin).

Attention should be paid to the presentation of examples – intended to reveal morphological structures even to those not knowing the language:

- The first line gives the **example** form or construction (in phonemic transcription, or in some familiar transliteration, or also in the standard orthography), with **hyphens** indicating word-internal morphological boundaries and with **blank spaces** separating (morphological-syntactic) words.
- The second line provides a **gloss**, with the morphological **segmentation** corresponding exactly to that of the example; semantic components not separated by a morphological boundary are separated by a **period** (e.g., SPECIFIC.ACCUSATIVE or GEN.PL), except in the case of person and number where the period is omitted (e.g., 1PL rather than 1.PL).
- The third line provides a **translation** and any useful further information.

tiê´ng Viêt(nam), Viêt-ngũ (Vietmuong subfamily, Mon-Khmer family, Austro-Asiatic phylum)

(1) *Sáng nay tôi uô´ng hai tách cà.phê*
morning this me drink two cup coffee
'I drank two cups of coffee this morning'

- 7 in Vietnamese, 8 words in the English translation (to go by blanks in the written form) – not a big deal.
- 3 or 4 words in English are complex (*cup-s* [PLURAL], *drank* [PAST of *drink*], *I* [SUBJECT case, SINGULAR number of *me*, *we* ...], *th-is*?), none is in Vietnamese.
- The complex "words" in English are each a word-form among several of a lexeme; in Vietnamese, lexemes are not realised by several word-forms, but – with a very few exceptions (see below) – only by one.
- The morphemes-per-word ratio for this sentence: 7 : 7 = **1.0**
– couldn't be less synthetic/more analytic!

(2) *Tôi ăn lót-dả o· câu.lạc.bô, chú´ không phải o· họ·p.tác.xá*
me eat line-stomach at club but not correct at cooperative
'I ate breakfast at the club, and not at the cooperative'

- *lót-dả* 'to line [one's] stomach', two stems/words, a verb followed by a noun, in a morphological construction forming one complex word/lexeme, i.e., a compound.
- Morphemes-per-word count for this sentence: 11 : 10 = **1.1**,
  still very much at the analytic end of the continuum.

(3) *mùa-màng*
REDUPL-crop
'crops, vegetation'

- with reduplication to express, among other notions, that of COLLECTIVE.

(4) *canh-kiê´c*
soup-EMOTIVE (a suffix)
'soup and the like'

- probably the only genuine affix of the language

Summary: Vietnamese confirms the idea that if there is any morphology, it will be compounding; if a little more, perhaps reduplication for notions that this kind of exponent is well suited to express; if yet more, a suffix of none-too-specific meaning.

Overall, such morphology does not raise the average morphemes-per-word count much above **1.0**, and Vietnamese therefore is a paradigm case of an analytic language. (In fact, it is exceptionally radical in taking analyticity to the extreme, much further than Chinese, which is often cited as an example.)

Constructions in Vietnamese are almost exclusively syntactic; hardly any are morphological. Distinguishing **morphemes**, as constituent parts of morphological constructions, from **words**, the minimal units of syntax, is necessary even for Vietnamese, but it is a distinction of very limited usefulness for its grammar.

Vietnamese almost exclusively relies on syntax (and the lexicon) and gives far less responsibility to morphology than does Latin or also English.

[Source of examples and analyses: Nguyễn Đình-Hoà. 1997. *Vietnamese*. (London Oriental and African Library 9.) Amsterdam: Benjamins. Apologies for diacritic disarray.]

Điều 1: Tất cả mọi người sinh ra đều được tự do và bình đẳng về nhân phẩm và quyền. Mọi con người đều được tạo hoá ban cho lý trí và lương tâm và cần phải đối xử với nhau trong tình bằng hữu.

All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.

(Article 1 of the Universal Declaration of Human Rights)

http://www.ohchr.org/EN/UDHR/Pages/Language.aspx?LangID=vie

Turkish (Turkic subfamily of Altaic, a family widely spread over Eurasia, and reaching as far north as Lithuania and as far west as Berlin Kreuzberg)

(1) *Ev-ler-i* *al-dı-k*
house-PLURAL-SPECIFIC.ACCUSATIVE buy-PAST-1PL.SUBJECT
'We (have) bought the houses'

- 2 words in Turkish, 4 (or 5) in English;
- 8 basic building blocks, to judge by the gloss:
  4 combined in the first word, 4 in the second in Turkish,
  with some building blocks given separate expression that would be cumulated in languages such as Latin, e.g. PLURAL number and ACCUSATIVE case;
- morphemes-per-word ratio for this sentence: 6 : 2 = 3,
  comparable to Latin.

(2) *Tebrik ve teşekkür-ler-im-i sun-ar-ım*
congratulation and thank-PLURAL-1PL.POSSESSOR-SPEC.ACC present-AORIST-1SG.SBJ
'I offer my congratulation and thanks'

- The first word seems morphologically simplex, in comparison with the third, consisting of 4 morphological parts: How come? (Inflections are only expressed once, with the second conjunct.)
- Morphemes-per-word ratio: 9 : 4 = 2.25

(3) *daya-n-ış-tır-ıl-amı-yabil-ecek mi-ymiş-iz?*
prop.up-REFL-RECIP-CAUS-PASS-IMPOTENTIAL-POTENTIAL-FUTI INTERROG-INFERENTIAL-1PL.SBJ
'Is it said that we may not be able to be made to practise mutual aid?'

- Remarkable! 2 words in Turkish, 16 in English!
- Morphemes-per-word ratio: 11 : 2 = 5.5, reaching a new high

(4) *Resim-ler-imiz kardeş-ler-iniz-in-ki-ler-den kıymet-li-dir*
picture-PL-1PL.POSS brother-PL-2PL.POSS-GEN-PRO-PL-ABL value-ADJECTIVISER-be.3
'Our pictures are more valuable than those of your brothers'

- 3 words in Turkish, 10 in English!
- Morphemes-per-word ratio: 13 : 3 = 4.33

Overall, taking the average of our four examples sentences (**3.77**), Turkish comes out as more synthetic than Latin.

[Source of examples and analyses: Lewis, G. L. 1967. *Turkish grammar*. Oxford: Clarendon Press.]

Atatürk introducing the new Turkish alphabet to the people of Kayseri, 20 September 1928
http://en.wikipedia.org/wiki/Turkish_alphabet

Bütün insanlar hür, haysiyet ve haklar bakımından eşit doğarlar.
Akıl ve vicdana sahiptirler ve birbirlerine karşı kardeşlik zihniyeti ile hareket etmelidirler.

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(Article 1 of the Universal Declaration of Human Rights)

http://www.ohchr.org/EN/UDHR/Pages/Language.aspx?LangID=trk

But regardless of whether a language has as much morphology as Turkish or Latin (3.77 and 3.0 morphemes per word on average respectively) or as little as English or even Vietnamese (1.5 morphemes per word and barely above 1.0 respectively), such languages equally recognise a distinction between **words** and **morphemes**.
Turkish, Latin, and English all have **two distinct levels of constructions**, **morphological** and **syntactic**, with morphemes and words as their respective constituent parts.

The difference between such languages consist in how much and exactly what responsibility they give to morphology and to syntax:
in Turkish and Latin, since there is more morphology to be relied on than in English, it will have to do more grammatical work, work done by syntax in English.

But things can also be more radically different.

Kalaallisut (a.k.a. West Greenlandic, the language of the Kalaallit,
the inhabitants of Greenland, having settled there in the 13th century,
long before the Danes and earlier European whalers arrived;
a member of the Inuit subfamily of the Eskimo-Aleut family,
at home in the entire Arctic area)

(1) *(kissartu-mik)* *kavvi-sur-put*
(hot-INSTRUMENTAL) coffee-drink-3PL.INDICATIVE
'They drank (hot) coffee'

morphemes-per-word: 5 : 2 = 2.5

(2) *Nuum-muka-ssa-atit*
Nuuk-go.to-FUTURE-2SG.INDICATIVE
'You will go to Nuuk'

morphemes-per-word: 4 : 1 = 4.0

(3) *ikiu-palla-ssa-vakkit*
help-quickly-future-1SG/2SG.INTERROGATIVE
'Shall I help you a moment?'

morphemes-per-word: 4 : 1 = 4.0

(4) *tusaa-nngit-su-usaar-tuaannar-sinnaa-nngi-vip-putit*
hear-not-PARTICIPLE$_{INTRANS}$-pretend-always-can-not-really-2SG.INDICATIVE
'You simply cannot pretend not to hear all the time'

morphemes-per-word: 9 : 1 = 9.0

(5) *aliikkus-irsu-i-llammas-sua-a-nira-ssa-gukku ...*
entertainment-provide.with-SEMITRANSITIVE-one.good.at-big-be-say.that-FUTURE-1SG/3SG.CONDITIONAL
'If I should say that he is a good entertainer ...'

morphemes-per-word: 9 : 1 = 9.0

The average morphemes-per-word ratio for our example sentences is **7.13**, way above Turkish (3.77), and Kalaallisut is rightly considered a paradigm case of **polysyntheticity**.

To flesh out this typological concept:

- All example sentences are one word in West Greenlandic, but several words in the English translations – as many as ten in (4) and (5); only the adjective in (1), 'hot', an optional part, would add a second word (but there are also ways of "incorporating" adjectives).
- Many independent morphemes in English ("words": adverbs, negation, modal auxiliaries, pronouns, ...), correspond to bound morphemes (affixes) in West Greenlandic;
- Many syntactic constructions in English (verb – verb, verb – noun) correspond to morphological constructions in West Greenlandic;

English can do something that looks similar, but not as the normal way of clause construction: *noun incorporation* (a sort of compound), but not **English noun-incorporates a lot*.

- In fact, whole clauses and in fact multi-clause sentences in English (syntactic constructions) standardly correspond to single words in West Greenlandic (morphological constructions) – to the extent that the very distinction between these kinds of units, **word** and **clause/sentence**, which is so central to languages like English, begins to look doubtful for languages like West Greenlandic (hence the traditional term "sentence-words" for such constructions where the verb "incorporates" everything else – object, adverbials, subject, pronominals or also nominal).

[Source of examples and analyses: Fortescue, Michael. 1984. *West Greenlandic*. (Croom Helm Descriptive Grammars.) London: Croom Helm.]

Inuit tamarmik inunngorput nammineersinnaassuseqarlutik assigiimmillu ataqqinassuseqarlutillu pisinnaatitaaffeqarlutik.
Silaqassusermik tarnillu nalunngissusianik pilersugaapput, imminnullu iliorfigeqatigiittariaqaraluarput qatanngutigiittut peqatigiinnerup anersaavani.

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(Article 1 of the Universal Declaration of Human Rights)

http://www.ohchr.org/EN/UDHR/Pages/Language.aspx?LangID=esg

9.1.2. There are yet other ways of quantifying the amount of morphology.

Instead of counting morphemes and words in texts, we could look at morphological **systems**. Such systems are defined through

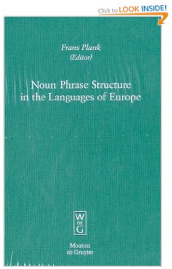
- which and how many morphological **categories** they contain;
- which and how many **terms** are realising those categories;
- which and how many **exponents** there are to express those terms.

The richer such systems, the more synthetic a language;
the poorer a system, the more analytic a language.

By the way, *The Guinness Book of Records* awards the crown of morphologically richest language on earth, with particular reference to the number of cases, to Tabasaran, a language of Daghestan (Lezgic branch of the Northeast Caucasian family): Tabasaran reputedly has more than 40 cases!

But the *Guinness Book of Records* errs, having gotten the morphological analysis wrong: not all of these forms that are being counted here are really simple cases; instead there are combinations of genuine cases (a relatively modest number in Tabasaran: Hungarian has more, namely around 20) with local and directional and orientational morphemes.

Still, overall, the Northeast Caucasian languages are among those with the richest morphological systems. Instead of (or in addition to) *The Guinness Book of Records* read A. E. Kibrik's chapter in *Noun Phrase Structure in the Languages of Europe*, ed. F. Plank, Berlin: Mouton de Gruyter, 2003:



9.1.3. Whatever the method of measuring analyticity and syntheticity (morphemes per words; system complexity), when contemporary English is compared to English as spoken 1,500 years ago, it is striking how English has become more analytic: Old English was about as synthetic as Latin.

Similarly, the descendants of Latin itself – Portuguese, Galician, Spanish, Catalan, Occitan, French, Italian, Raeto-Romance, Sardinian, Romanian – have undergone the same kind of overall development from (more) synthetic to (more) analytic.

fisc·flōdu·āhōfonferg | enberig | warþgāsrīcgrornþærhēongreutgiswom | hronæsbān

Franks Casket, Northumbria, ca. 650 CE, http://www.britishmuseum.org/explore/highlights/highlight_objects/pe_mla/t/the_franks_casket.aspx

On the other hand, the history of morphology is not a one-way street.

Morphology – morphological categories, terms realising them, exponents expressing them – can diminish and wholly vanish –
(i) as a result of **phonological** change affecting and obliterating exponents, or (ii) in the course of **morphological** changes with the effect of simplifying or abandoning parts of morphological systems (as typically happens in untutored L2 acquisition).

But morphology can also be newly created and then elaborated.
Its chief source is the lexicon: lexical items (nouns, verbs, adjectives, pronouns) in syntactic constructions.
As seen earlier, morphology can also be borrowed from donor languages or be re-analysed from existing native morphology.

Here is a typical example of the going and coming of morphology:

- Latin had an inflectional category of TENSE with FUTURE as one of its terms: e.g., *cant-a:-b-o:* sing-THEME-FUT-1SG.IND.ACT.
- This way of expressing FUTURE was given up by the speech communities that continued speaking Latin in the form of the Romance vernaculars, probably because the exponent of FUT was so similar to that of IMPERFECT (*cant-a:-b-am* etc.) as to cause confusion.
- But in several descendants of old Latin, such as French, a new morphological FUTURE was created from a ("periphrastic") syntactic construction:

  cant-a:-re *hab-e-o:*
  sing-THEME-INF have-THEME-1SG.PRES.IND.ACT
  'I am under an obligation to sing, I have to sing'

In this last development, the meaning of a component form and of the construction changed: **necessity**, a modality with reference to the future (when there is an obligation to do something, this will typically be done in future) and expressed through a verb of **possession**, was reanalysed as a FUTURE **tense**.

At the same time, the nature of the forms and their grammar changed, insofar as a **syntactic** construction, via a stage where the auxiliary verb had become an enclitic, was reanalysed as a **morphological** construction.

(je) *chant-r-ai*
(I) sing-FUT-1SG

Today's principal exponent of FUTURE in French (similarly in Italian) is in fact the segment /r/ of the erstwhile suffix of the INFINITIVE (joined in this expressive task by the word-final endings, *-ai*, *-as*, *-a*, etc., which continue the forms, but not the meaning, of *avoir* 'have'):
in this respect, the relationship between exponents and terms has been reanalysed, too.

To sketch another example where grammaticalisation has come full circle – that is, where a content/lexical word changed to a function/grammatical word, which in turn changed to an affix, via an enclitic function word, and eventually disappeared through phonological "erosion" or as part of a morphosyntactic change:

The PAST tense marker of “weak” verbs in Germanic is a dental suffix:
G *schau-t-*, E *look-ed*, Sw *kika-de* etc.

This suffix goes back to (the stem of) the auxiliary verb ‘to do’, itself tense-inflected, which was in syntactic construction with a main verb, and with the auxiliary getting phonologically and then also morphologically bound to the preceding main verb, undergoing considerable reduction in the process;
schematically: *he look did* > *look=did* > *look-ed*

In varieties of English (such as Black Vernacular English), the dental suffix has fallen victim to phonological change (cluster simplification),
in such weak verbs where PAST is clear from stem vowel:

he kep keep-PAST, vs. *keep* PRES; but *he look-ed*

Elsewhere in Germanic, the inflectional PAST tense has been discontinued in a different manner, being replaced by the periphrastic PRESENT PERFECT ("Präteritumsschwund").

Thus, grammar, including morphology, is not eternal, but is created, changed (elaborated or scaled down), and abandoned by speech communities, as speakers, and especially L1 and L2 learners, analyse forms and constructions and their meanings differently from preceding generations.

The history of morphology is not linear, but cyclical: upon creation follows change and destruction or discontinuation; upon loss follows re-creation from lexicon and syntax, and so forth. (As long as there are speakers continuing their language.)

Synthesis and analysis are recurring stages of this eternal cycle.

A keyword here is **grammaticalisation**: **lexical** forms in loose **syntactic** constructions are reanalysed by new generations of speakers, ending up as **grammatical** forms in tight **morphological** constructions, and are eventually obliterated and discontinued. A new cycle can begin: there will always be the lexicon and loose syntax to recycle.

The cycle of grammaticalisation

(I.i) ... [$X_{\text{lex word}}$ $Y_{\text{lex word}}$]$_{\text{phrase}}$ ⋯ downgrading lex > gram

(I.ii) ... [$X_{\text{lex word}}$ $Y_{\text{gram word}}$]$_{\text{phrase}}$ ⋯ phono binding: cliticisation

(I.iii) ... [$X_{\text{lex word}}$=$y_{\text{gram word: clitic}}$]$_{\text{phrase}}$ ⋯ morpho binding: affixation "univerbation"

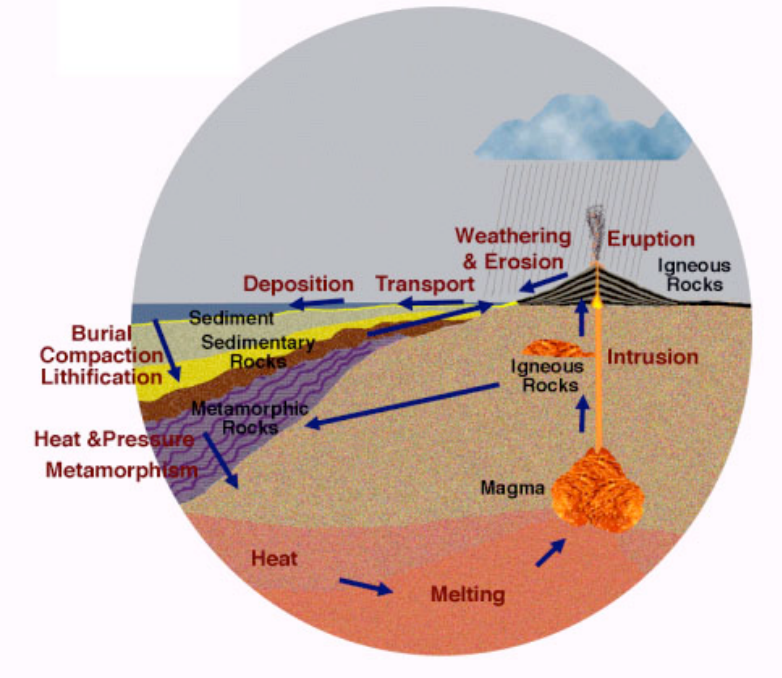
(I.iv) ... [X_{stem}–y_{affix}]$_{\text{lex word}}$ ⋯ loss of affix

(I.v) ... [X'_{stem}]$_{\text{lex word}}$ ⋯

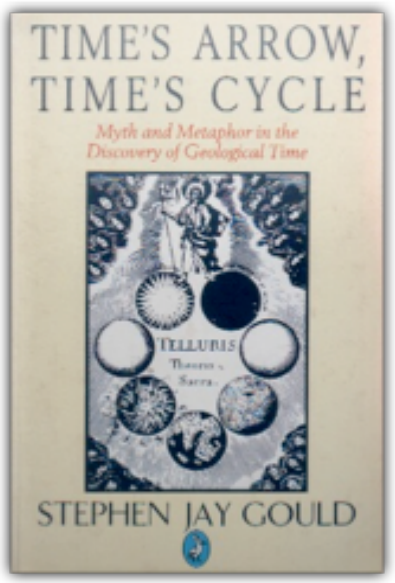
(II.i) ... [[X'_{stem}]$_{\text{lex word}}$ $Z_{\text{lex word}}$]$_{\text{phrase}}$ ⋯ new combinations of lex words

... and so on, indefinitely

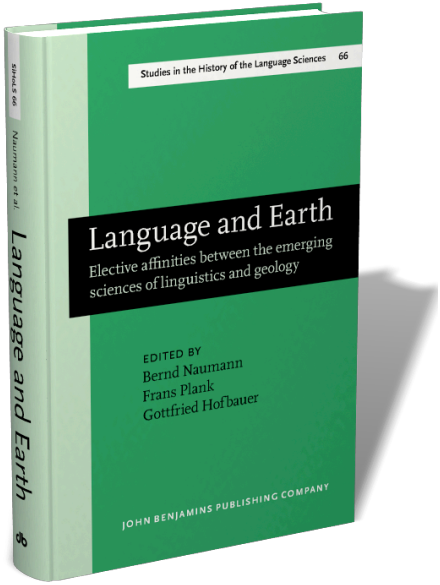
One of the (by now numerous) textbooks is *Grammaticalization* by Paul Hopper & Elizabeth Traugott, Cambridge UP, 2003.



The Geostrophic (or Rock) Cycle
http://www.indiana.edu/~geol116/week3/rockcyc.JPG



Read this book for its discovery



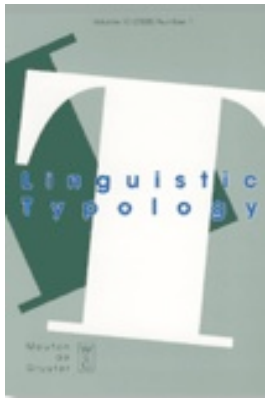
... and that for how geology showed linguistics the way towards the recognition of the Morphology Cycle: morphology doesn't grow from roots and on stems, and is no edifice going to final wrack and ruin

9.2. AGGLUTINATIVE — FLEXIVE

A key concept in the qualitative dimension of morphological typology is the distinction of AGGLUTINATION and FLEXION (sometimes also called FUSION, so as not to be confused with INFLECTION).

Background (it is too complex a matter to be done justice in this introduction, which is limiting itself to bare essentials):

Plank, Frans. 1999. Split morphology: How agglutination and flexion mix. *Linguistic Typology* 3. 279-340.
Plank, Frans (ed.). 1991. *Paradigms: The economy of inflection*. Berlin: Mouton de Gruyter.



Very imporyantly, agglutination vs. flexion is a higher-level distinction subsuming a whole range of more elementary distinctions, which are all to do with the nature of morphological exponents.

Sometimes these elementary distinctions are in agreement with one another, for single exponents or indeed whole languages, allowing whole languages to be categorised as either agglutinative or flexive;
sometimes they are not, jeopardising a clear-cut higher-level distinction.

The two most important elementary distinctions are these two:

- Are exponents **SEPARATIVE** or **CUMULATIVE**?
  Do they express a single category or more than one, without being further segmentable?
- Are exponents **INVARIANT** or **VARIANT**?
  Do they appear in just one morphological form or in morphologically different forms, giving rise to inflection classes?
  (That is, phonologically or semantically conditioned allomorphs are not considered variant in the present sense.)

Being separative and invariant are ingredients of agglutination;
being cumulative and variant are ingredients of flexion.

9.2.1. To illustrate **SEPARATION** and **CUMULATION** from English:

separative

-s PLURAL as in *(the) cat-s*

- expresses only a single category, NUMBER: PLURAL

cumulative

-s PERSON OF SUBJECT: 3., as in *(she) save-s*
NUMBER OF SUBJECT: SINGULAR,
MOOD: INDICATIVE,
TENSE: PRESENT,

- expresses four categories with no way of dividing up the exponent into four parts, one for each category

Demonstration that the single segment *-s* really expresses a four-way categorial contrast: PERSON (of subject), NUMBER (of subject), TENSE, and MOOD:

- 1st and 2nd PERSON (vs. 3rd) SINGULAR in INDICATIVE PRESENT:
  I/you save-Ø;
- 3rd PERSON PLURAL (vs. SINGULAR) NUMBER in INDICATIVE PRESENT:
  they save-Ø;
- 3SG PRESENT in SUBJUNCTIVE and IMPERATIVE (vs. INDICATIVE) MOOD:
  God save the queen; someone save me!
- 3SG (INDICATIVE) in PAST (vs. PRESENT) TENSE:
  she save-d.

Languages like German, Latin, West Greenlandic Eskimo are predominantly cumulative, languages like Turkish and indeed the majority of languages with inflectional morphology are predominantly separative.

And English?

As just seen, *-s* for 3SG.IND.PRES is cumulative while *-s* for PLURAL is separative.

And the rest of its inflection?
PAST TENSE is expressed separatively (*-d*/*-t* or ablaut).
And GENITIVE – if it is inflection rather than encliticisation?
The question here is how GENITIVE is related to PLURAL.

Homework:

1. Attempt a morphological analysis of examples like these.

these oxens' tails
these mice's tails
these children's parents
these cats' tails

Compare with Turkish (undoubtedly separative, in these respects and just about all others):

kedi-ler-in	*kuyruk-lar-ı*	*cats' tails*
cat-PLURAL-GENITIVE	tail-PLURAL-HEAD	
inek-ler-in	*kuyruk-lar-ı*	*oxen's tails*
ox-PLURAL-GENITIVE	tail-PLURAL-HEAD	
fare-ler-in	*kuyruk-lar-ı*	*mice's tails*
mouse-PLURAL-GENITIVE	tail-PLURAL-HEAD	

2. 3SG.IND.PRES is cumulative in Standard English, as just demonstrated. What about regional and social varieties of English which are doing something like this:

- they either extend *-s* to all singular persons, so that it becomes a number marker, expressing no person distinctions (*I says*, *you says*, *he/she says*, *we/you/they say*);
- or they omit the *-s* entirely from verb inflection (*I say*, *you say*, *he/she say*, *we/you/they say*);
- and/or they don't use the subjunctive, thereby getting rid of the mood contrast.

To be firmly kept in mind: separation and cumulation are primarily properties of individual morphological forms and of the terms and categories they express!

It is only secondarily that they can (or cannot) be considered properties of entire languages. If all inflectional forms of a language are either of one kind or another, then the language as a whole can be classified as separative or cumulative, as the case may be. Otherwise a language will have to be recognised as predominantly either separative or cumulative, or, if neither separation nor cumulation predominates, as in this respect mixed.

Naturally, as always in life and in linguistics too, when things turn out to be one way or another, one wants to know **why** they are one way rather than the other.

For instance, why does the line between separation and cumulation run between PLURAL and PAST (being both separative) and PERSON, NUMBER, MOOD, PRESENT (cumulative) in English? Why isn't PAST cumulative? Why isn't 3rd PERSON given separate expression? Is there anything predictable, thereby also helping the language acquirer, about (some terms of) some categories inclining towards separation and others towards cumulation? Is this to do with the terms and categories concerned? Their (un-)markedness? The history of their forms of morphological expression? Ask again in Advanced Morphology ...

Cumulus clouds by Luke Howard

http://www.rmets.org/weather-and-climate/observing/luke-howard-and-cloud-names

9.2.2. For the parameter **INVARIANCE/VARIANCE** we need to recall what we earlier learnt about the **conditioning of allomorphy**.

Is PLURAL in English variant?
Yes, there are a number of alternative exponents of PLURAL which are allomorphs and which are lexically conditioned; only the alternation of /ɪz, z, s/ is phonologically conditioned (and is of a phonological kind, too), and zero is semantically conditioned in the case of the "game plural".

Is 3SG.IND.PRES in English variant?
No, not morphologically: there is an alternation of exponents, of a phonological kind, namely between /ɪz, z, s/ (as with noun PLURAL), but it is phonologically conditioned. Morphologically speaking, /ɪz, z, s/ are one and the same.

Is PLURAL in Turkish variant?
No, not morphologically: there is an alternation of exponents, between *-ler* and *-lar*, but it is of a phonological nature and is phonologically conditioned (vowel harmony). Morphologically speaking, *-ler* and *-lar* are one and the same.

Is GENITIVE in Turkish variant?
Once more no: there is an alternation, *-in*/*-ın*/*-un*/*-ün*, but it is of a phonological kind and is phonologically conditioned (vowel harmony).

And so on.

As with separation and cumulation, invariance and variance are primarily properties of the exponents of individual terms of individual morphological categories, not properties of entire languages.

Only secondarily, after the examination of the entire morphological system of a language, are we entitled to generalise that that language as a whole is exclusively, predominantly, or mixedly either invariant or variant.

Thus, Turkish, for example, is predominantly and almost exclusively invariant in its inflection, while Latin is predominantly variant and English mixes invariance and variance.

9.2.3. SEPARATION/CUMULATION and INVARIANCE/VARIANCE are logically speaking independent of ane another: it should be possible for terms of morphological categories to have the value SEPARATIVE on one parameter and the value VARIANT on the other, or to be CUMULATIVE and INVARIANT. Any combination of values is conceivable and not inherently contradictory.

It is an empirical question – and one of the remits of the research programme of morphological typology – how these two parameters (and others, not considered here) relate to one another in individual forms and in entire languages.

Here are some of the examples we have already been looking at, classified with respect of these two parameters:

- NOM.PL in Latin: cumulative, variant
  (likewise all other cases and numbers)
- 3SG.IND.PRES in English: cumulative, invariant
- PLURAL in English: separative, variant
- PLURAL in Turkish: separative, invariant
- GENITIVE in Turkish: separative, invariant
  (likewise all other cases)

Homework:
Classify further inflectional forms from other languages.

Even such a small sample goes to show that SEPARATION/CUMULATION and INVARIANCE/VARIANCE occur in all combinations.

Nonetheless, a wider-ranging survey would reveal certain preferences; across the languages of the world, these two combinations clearly predominate:

- SEPARATION and INVARIANCE
- CUMULATION and VARIANCE

Accordingly, languages have been classified holistically as follows:

- a language is (predominantly/exclusively) **AGGLUTINATIVE** if its morphological categories are (predominantly/exclusively) expressed **separatively** and **invariantly**;
- a language is (predominantly/exclusively) **FLEXIVE** if its morphological categories are (predominantly/exclusively) expressed **cumulatively** and **variantly**.

The challenge remains to discover, through crosslinguistic empirical research, which particular mixtures of agglutination (separation, invariance, etc.) and flexion (cumulation, variance, etc.) are attested, and whether there are general constraints on which mixtures are permissible.

9.2.4. Like analyticity and syntheticity, separation/cumulation and invariance/variance can **change** over the history of a language.

Typically, separative exponents are turned into cumulative ones through the working of fusional phonology, obliterating boundaries between adjacent morphemes. Invariant exponents tend to become variant, again through the working of phonology, adapting exponents to their different environments and thereby diversifying their forms.

But as with analyticity and syntheticity, there are no one-way streets of morphological change between agglutination and flexion.

In a qualitative as well as a quantitative sense, morphological types are best seen as developmental stages. Thus, typology needs to be pursued in tandem with historical linguistics.

Languages, including their morphologies, are what they have become.
They can only be as different as they have been able to become different.

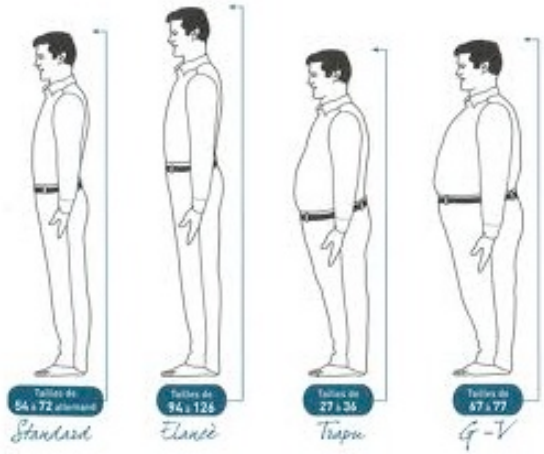
But that would be leading us far beyond Morphology I,
which herewith ends.

☺ 😐 ☹

morphologie rectangle

morphologie dite 8

morphologie A,
ou pyramide



morphologie masculine, L – XXXL

Quelle robe pour quelle morphologie?

http://www.ma-grande-taille.com/shabiller-selon-sa-morphologie-nos-conseils-pour-4-types-de-silhouette-32782