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Lecture 9
Latin morphology

English **mostly** does not directly borrow very many Latin and Greek words—
we borrow Latin and Greek **morphemes**, and build English words from them
using rules of English word formation.
However, the **morphology of Latin** has left traces how these words are built,
and there are a **few** Latin words borrowed **directly** into English.

Latin noun morphology

Like Old English, Latin nouns and adjectives were **inflected** for **case**—
inflectional **suffixes** showed **what role** the noun played in the sentence.
E.g., the Latin noun meaning 'cat' has the stem *fel-*;
that stem would have different suffixes for different grammatical functions:

- **nominative**   (subject of the sentence: *my cat likes me*)   *fel-es*
- **accusative**   (object of the sentence: *I like my cat*)   *fel-em*
- **genitive**   (possessive: *my cat's* breath smells funny)   *fel-is*
- **dative**   (indirect object: *I gave my cat a toy*)   *fel-i*
- **ablative**   (various other grammatical functions)   *fel-e*

(The nominative is usually the **default** form for **referring** to a Latin noun in isolation,
if the case doesn't matter.)

Not all nouns used the **same** set of case suffixes;
there were about 5 families of nouns, each with a different set of case markers
(and each with a whole different set of suffixes for the plural!).

When English borrows Latin nouns/adjectives, it **usually ignores case suffixes**,
and borrows **only the stem** (or the French form of the stem).
E.g., Latin *laps-us*, *popular-is*, *pictur-a* are borrowed as *lapse, popular, picture*.

Sometimes, however, English borrows a Latin word **with the nominative suffix**:
Latin *radi-us*, *analys-is*, *are-a* are borrowed intact as *radius, analysis, area*.

When this happens, **sometimes** English only borrows the nominative **singular**,
and uses the **regular English plural suffix** for the plural:
e.g., in English, the plurals of *bonus* and *area* are *bonuses* and *areas*.
But **frequently** English borrows **both the nominative singular and plural**,
so the plural form **used in English** is the Latin nominative plural:
e.g., **in English**, the plurals of *radius* and *analysis* are *radii* and *analyses*.

USUALLY
we only care about stems, not suffixes

both are Latin plurals

Common Latin nominative suffixes, singular and plural:

singular	plural	
-a	-ae	*larva, antenna*
-es	-es	*species, series*
-is	-es	*crisis, analysis*
-um	-a	*dictum, millennium*
-us	-i	*radius, cactus* ~~many exceptions~~
-s	-es	(see below)
zero	-a	(see below)

Each of these families has produced **many English words** that have Latin
   endings in **both** the singular and plural forms.
Also *-on* is a common **Greek** nominative singular suffix with plural *-a*,
   as in *polyhedron* and *phenomenon*.

Some situations to watch out for:

The Latin nominative singular *-us* ending **usually** corresponds to plural *-i*.
   However, there are many *-us* words whose Latin plurals **aren't** in *-i*.
   It is a **common mistake** to use *-i* for the plurals of these words.
- Some Latin words in *-us* have nominative plurals **also in -us**:
      this is the case for *apparatus, consensus, detritus, fetus, status,* and others.
      In English we often use **no plural at all** for these words, or regular *-es*.
- Latin *virus* was an **oddball irregular noun**,
      and no one today has any idea what its nominative plural was.
- Some nouns **end with -us** but have **no nominative singular suffix**;
      the *-us* is **part of the stem**, and the nominative plural suffix is *-a*.
   To make it more complex, the plural uses a **different allomorph** of the stem:
      the plural *-a* attaches to an allomorph that ends in *-r*.
      (This is the Latin allomorphic rule of **rhotacism**: *s* becomes *r* between vowels.)
   Examples: *corpus ~ corpor-a*; *genus ~ gener-a*.
- A few other weird cases: *rebus* and *omnibus* are Latin nouns, but not nominatives;
      octopus and *platypus* are Greek, with *pus* an allomorph of ~~*pod*~~ 'foot';
      ignoramus is a Latin **verb**!
When in doubt whether a word in *-us* has a plural in *-i*, consult a dictionary.

Note *-a* is a nominative **singular** ending in **some** words and a **plural** in others!
   There are a few cases of words that **originated** as *-a* plurals in Latin,
   but have come to be used as singulars in English (some or all of the time).
Examples of this include *agenda, data, media*—
   these originated as the plurals of *agendum, datum,* and *medium,*
   but they're often or always treated as singular in English.

The **nominative singular suffix -s** often causes **allomorphy** in its base,
   leading to the singular and plural having different stem allomorphs.
Some common patterns found in words borrowed into English:
- *x = cs*. *Appendix* and *matrix* **do end with the -s suffix** (i.e., *appendic-s*, *matric-s*);
   their plurals are therefore *appendic-es* and *matric-es*.
   (Note that the rule "*c* → [s] / __front" plays a role here as well!)
- **Voicing assimilation.** The base form of the root *laryng-* contains a *g*;
   the *-s* suffix causes *g* to **devoice** to [k] and produce *larynx*.
- **Latin vowel weakening**: *e* in the basic form may reduce to *i* in the plural:
   index, *apex*, *vertex* have the plurals *indices*, *apices*, *vertices*.

English has a **small number of nouns** borrowed from Latin cases **other than** the nominative:
- *vim* and *requiem* are from Latin accusatives (*vis* 'power', *requies* 'rest')
- *quorum* is a genitive plural (the pronoun *qui* 'which')
- *rebus* is an ablative plural (*res* 'thing')
- *omnibus* is a dative plural (*omnis* 'all')

Latin noun derivational morphology

A Latin noun **may** be formed just by attaching inflectional suffixes to the **root**:
   e.g., *capsa* 'box' is just the **lexical** morpheme *caps-* plus the case ending *-a*.
But a noun may also include **derivational suffixes**,
   which attach **between** the root and the inflectional ending,
   e.g. *caps-ul-a* 'small box', containing the **diminutive** suffix *-ul-*.
(A **diminutive** is a morpheme that denotes that something is **relatively small**.)

It can be difficult to reconstruct the exact **basic forms** of derivational suffixes;
   many of them have several allomorphs.
(But the **textbook is confusing** where it lists suffixes *-la*, *-lum*, *-lus* in *molecula*, *alveolus*, etc.—
   -a, *-um*, *-us* is the **nominative** suffix, and *-ul-*, *-cul-*, *-ol-* are all **allomorphs** of the diminutive.
   This same mistake appears for other suffixes in Table 9.2.)

As usual, many derivational suffixes only indicate a **syntactic category**;
   but others indicate a more **specific meaning**—
- *-ari-* indicates a **place**: *libr-ary*, *sanctu-ary*, *aqu-ari-um*
- *-(t)or* indicates an **agent**—who or what **performs a particular action**:
   ac-tor, *connec-tor*, *cura-tor*, *inspec-tor*
- *-(c)ul-* is often a **diminutive**: *mole-cule*, *parti-cle*, *glob-ule*, *homun-cul-us*
   (but not always a diminutive: *mira-cle*, *mana-cle*)
Note that they sometimes appear in more French-like forms (e.g., *-cle*),
   sometimes in Latin-like forms but without the inflectional suffix (*-cule*),
   and sometimes in exact Latin forms with the inflectional suffix (*-cul-us*).

Adjective-forming derivational suffixes are treated similarly to noun suffixes,
   usually with the Latin inflectional suffixes removed.
But English *-ous* can represent **either** Latin derivational *-os-* or inflectional *-us*:
   Latin *call-os-us*, *curi-os-us* → English *call-ous*, *curi-ous*, but
   Latin *pi-us*, *vacu-us*, *anxi-us* → English *pi-ous*, *vacu-ous*, *anxi-ous*.
   (Latin *-os-* can **also** appear as English *-os(e)*: *verb-ose*, *oti-ose*.)

Latin verb morphology

Latin verbs have **more complicated morphology** than nouns,
  with a large number of tenses, agreement suffixes, etc.,
  and different allomorphs of the root in different inflectional forms.
Fortunately **not that much** of the morphology is relevant for English! !

The **principal parts** of a verb are the forms you need to know
  to be able to figure out all the **other** inflected forms.
English verbs have three principal parts—
- the **infinitive** (*stay, take, sew, teach*)
- the **past tense** (*stayed, took, sewed, taught*)
- the **past participle** (*stayed, taken, sewn, taught*)
If you know those, you can construct any other forms (e.g., *staying, stays*)
  (except for the **very most irregular** verbs).

Latin verbs have **four principal parts**:
- the first-person **present tense**: *amo* 'I love', *video* 'I see', *capio* 'I take'
- the **infinitive**: *amare* 'to love', *videre* 'to see', *capere* 'to take'
- the first-person **perfect tense**: *amavi* 'I loved', *vidi* 'I saw', *cepi* 'I took'
- the **perfect participle**: *amatus* 'loved', *visus* 'seen', *captus* 'taken'

The **perfect tense** is almost always **irrelevant** to English loanwords,
  and the **present tense** and **infinitive** are **very similar**.
So for our purposes, there are only **two relevant principal parts** of Latin verbs:
  ① the **present (infinitive) stem** and the ② **perfect participle**.

① **The Latin present stem** — present stem = root + thematic vowel

The **present stem** of a Latin verb usually consists of (an allomorph of) the **root**
  plus a **thematic vowel**—an **empty morph** that may be either *-a-*, *-e-*, or *-i-*.
  (Some verbs use both *-i-* and *-e-* as thematic vowel, depending on the inflectional suffix.)
The **inflectional endings** on a verb usually come **after the thematic vowel**:

am-a-re 'to love'	*vid-e-re* 'to see'	*aud-i-re* 'to hear'
am-a-s 'you love'	*vid-e-s* 'you see'	*aud-i-s* 'you hear'

Some English verbs are just **based on the present stem** of a Latin verb
  (though the thematic vowel usually gets dropped or becomes "silent *e*"):
Latin *requir-e-re* → English *require*; *imbib-e-re* → *imbibe*; *imping-e-re* → *impinge*.
  (For simplicity, I'm not showing hyphens between prefixes and roots.)

A few **derivational verb suffixes** exist;
  the most important is *-sc-*, which means 'begin' or 'become':

  conval-e-sc-e-re → *convalesce* 'become strong'
  evan-e-sc-e-re → *evanesce* 'begin to vanish'

Note *-sc-* has thematic vowels both before and after it.

The Latin **present participle** has the suffix *-(e)nt-* after the thematic vowel;
    it has the **same meaning** as English *-ing*,
    indicating someone or something that **is performing the action** of the verb.

      am-a-nt- 'loving'   *vid-e-nt-* 'seeing'   *aud-i-ent-* 'hearing'
      (These examples omit the Latin inflectional endings, for simplicity.)

This participle is a **very common source** for adjective and noun loanwords,
    with **roughly the same meaning** as it has in Latin:

      err-a-nt- 'wandering' → *errant*
      ag-e-nt- 'doing' → *agent*
      adolesc-e-nt- 'growing up' → *adolescent*
      conven-i-ent- 'coming together' → *convenient*
      recip-i-ent- 'receiving' → *recipient*

The derivational suffix *-ia* is used in Latin to turn participles into **abstract nouns**;
    the sequence *-nt-ia* usually ends up as *-nce* or *-ncy* in English, due to the effect of French:
      errancy, agency; adolescence, convenience.

The **gerundive participle** is also based on the present stem;
    its suffix is *-(e)nd-* after the thematic vowel.
It usually has a **future passive** meaning—indicating that something **will** or
    should undergo the action denoted by the verb.
Thus the *ag-e-nd-a* consists of things that **should be done**;
    an *add-e-nd* is a number that **will be added** to another number.
Errand is an example of a word derived from the gerundive whose relationship
    to a future passive meaning is less obvious.

The Latin perfect participle

The perfect participle **usually** has a **passive** meaning as well,
    referring to something or someone that has **undergone the action** of the verb.

The formation of the perfect participle is **more varied** than the present stem.

In its **most basic form,** is it created by adding **the suffix -t-** to the **root**:
    sec- 'cut' → *sec-t-us* '(having been) cut'
    rap- 'seize' → *rap-t-us* '(having been) seized'

Sometimes, the suffix *-t-* is added **after a thematic vowel**:
    am- 'love' → *am-a-t-us* '(having been) loved'
    aud- 'hear' → *aud-i-t-us* '(having been) heard'.

The perfect participle often has a **different allomorph of the root** than the
 present stem does.
This may be because the present stem uses **nasal infixation**,
 or it may be because they have different types of **Latin vowel weakening**,
 or there is **assimilation** or some other **morphophonological process**:

allomorphy	(prefix) + root	present stem	perfect participle stem	meaning
nasal infix	*vic-*	*vinc-e-*	*vic-t-*	'win'
nasal infix	*rup-*	*rump-e-*	*rup-t-*	'burst'
vowel weakening	*de-fac-*	*de-fic-i-*	*de-fec-t-*	'fail'
vowel weakening	*re-cap-*	*re-cip-i-*	*re-cep-t-*	'receive'
assimilation	*reg-*	*reg-e-*	*rec-t-*	'rule'
insertion	*sum-*	*sum-e-*	*sump-t-*	'take up'
rhotacism	*ges-*	*ger-e-*	*ges-t-*	'carry on'
multiple	*con-tag-*	*con-ting-e-*	*con-tac-t-*	'touch'

A frequent cause of allomorphy between present and past participle stems
 is the Latin morphophonemic rule *t+t* → *-ss-*.
Since the past participle suffix is *-t-*, **roots** that end with *-t-* or *-d-* will often end
 up with past participle stems using *ss* (or just one *s*) **instead of the *t*'s**.
 (The factors that cause it to be a **single** *s* involve cluster simplification and/or long vowels.)

t+t = ss	*pat-*	*pat-i-*	*pass-*	'undergo'
t+t = ss	*sed-*	*sed-e-*	*sess-*	'sit'
t+t = ss	*sent-*	*sent-i-*	*sens-*	'feel'
t+t = ss	*vid-*	*vid-e-*	*vis-*	'see'
t+t = ss	*ut-*	*ut-e-*	*us-*	'use'

Some verbs that **don't** end in *t* or *d* **also** form perfect participles in *-s-*;
 there's usually no good reason for this. (Sorry.)

irregular	*pell-*	*pell-e-*	*puls-*	'push'
irregular	*merg-*	*merg-e-*	*mers-*	'sink'
irregular	*curr-*	*curr-e-*	*curs-*	'run'

In fact, there are many verbs with **irregularly**-formed perfect participles;
 the allomorphy is just **arbitrary**, not based on morphophonological patterns
 (or at least, not based on morphophonological patterns that are common enough to learn):

irregular	*stru-*	*stru-e-*	*struc-t-*	'build'
irregular	*mov-*	*mov-e-*	*mo-t-*	'move'
irregular	*sequ-*	*sequ-e-*	*secu-t-*	'follow'

Even when perfect participles are formed **irregularly**, though,
 the stems **always end with *t* or *s***.

Perfect participle stems are **sometimes** used for nouns and adjectives with meanings based on the **passive** meaning of the participle itself:

intric-a-t- 'entangled' → *intricate*
solu-t- 'loosen, dissolve' → *solute* 'something that has been dissolved'
re-mot- 'moved back' → *remote* 'far away'
rap-t- 'seized' → *rapt* 'fascinated, engrossed'
sec-t- 'cut' → *sect* 'distinct subgroup of a religious group'

Sometimes there are **pairs** of words based on the **present** and **perfect** participles, with corresponding **active** and **passive** meanings:
Compare *solv-ent* 'something that dissolves' with *solute* 'something that has been dissolved'.

Occasionally perfect participles have active meanings (in Latin and English):
adul-t- 'having grown up' → *adult*
exper-t- 'having tried' → *expert* 'someone who **has tried** a lot of things'
(Compare these with *adolescent* 'beginning to grow up', *experience* 'the act of trying things'—these words are based on the **present** participles of the same verbs.)

But perfect-participle stems are used for a **wide variety** of functions in English.

Very many English **verbs** use the perfect participle stem of a Latin verb:
act, audit, bi-sect, con-struct, di-gest, ex-empt, im-merse, pro-secute, use, etc.—these verbs are all based on the corresponding Latin perfect participle stems.
The very common verb-forming suffix *-ate*—
renovate, generate, venerate, complicate, navigate, consecrate, create, etc.—comes from the **thematic vowel -a-** plus the **perfect participle suffix -t-**.

Perfect participle stems are also used for **basic abstract nouns** referring to the action of the corresponding verb: e.g., *sense, impulse, contact*.

Many **derivational suffixes** effectively attach to the perfect participle stem.
This is because the **basic forms** of these suffixes **begin with -*t*-**.
Since -*t*- is the basic form of the suffix that **creates** the perfect participle,
any other suffix beginning with -*t*- uses the **same allomorph** of the stem—
including the **irregular** allomorphs!

Derivational suffixes that attach to the perfect participle stem:
- -(*t*)*ion*, which forms **abstract nouns**:
  *action, section, audition, creation, generation, conviction, corruption,
  reception, assumption, digestion, compassion, session, vision, expulsion,
  immersion, excursion, construction, motion, prosecution*
- -(*t*)*ive*, which forms **adjectives**:
  *active, creative, generative, disruptive, defective, receptive, corrective,
  consumptive, digestive, passive, obsessive, compulsive, immersive, cursive,
  abusive, destructive, motive, consecutive*
- -(*t*)*or*, which forms **agent nouns**:
  *actor, sector, creator, auditor, generator, defector, receptor, director, sensor,
  professor, advisor, propulsor, cursor, instructor, motor, prosecutor*

Note -(*t*)*or* and present participle -(*e*)*nt* are **both** used for **agent nouns** in English,
but they **don't necessarily have the same meaning**:
actor and *agent* both mean 'someone who acts', but **in different ways**.
Cf. also *sector* vs. *secant*, *receptor* vs. *recipient*, *cursor* vs. *current*.
This demonstrates the **semantic flexibility** of some of these affixes.

another exception

Not all English words derived from Latin verb roots use the present or perfect
participle stems, though; **some** just use **other allomorphs**.
The words *con-tag-ious* and *frag-ile* are a good counterexample:
tag- and *frag*- are the **basic allomorphs** meaning 'touch' and 'break'.
They're **not** present stems (*tang*- and *frang*-) or past participle stems (*tact*-, *fract*-).

There are a **few** English words borrowed from **inflected** forms of Latin verbs,
with tense and subject-agreement endings and everything.
These are usually **not verbs in English**, and are taken from some **Latin phrase** they appear in.

Some examples:
- *affidavit* 'he/she has sworn'
- *audio* 'I hear'
- *caveat* 'let him/her beware'
- *credo* 'I believe'
- *ignoramus* 'we do not know'
- *recipe* 'take!' (imperative)
- *veto* 'I forbid'